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● **KAMRUL HASAN**

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SOUND STRUCTURES OF BENGALI AND ENGLISH: A CONTRASTIVE PHONOLOGICAL STUDY FOR PEDAGOGICAL PURPOSES

Abu Daud Hasan*

The dissimilarities between the sound system of Bengali and that of English pose certain problems to the Bangladeshi students learning English Language. These problems are called the linguistic problems. It is in this area that a linguistic approach would help the teachers of English.

A 'contrastive phonological study' of two particular languages means pointing out the similarities and contrasts not only between two sets of segmental phonemes, but also the differences in sound sequences, sounds in different positions and stress and intonation patterns.

Our first task would be to list the phonemes of English and compare them with those of Bengali which is the first language of the learners of Bangladesh. But mere comparison of phonemes is not enough, allophones should also be taken into account as allophonic contrasts also can create problems. For example, there is a/p/ phoneme in both English and Bengali; in English the pronunciation of /p/ in the initial stressed position is aspirated, but this aspiration is absent if phoneme /s/ occurs before /p/; thus 'pin' is pronounced as [p^hin] whereas 'spin' is pronounced as [spin]. But in Bengali the pronunciation of /p/ is the same everywhere. As a result, it generally happens that the Bangladeshi learners of English pronounce the word 'pin' as simply [pin] since they are habituated to do the same in their

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mother-tongue. They thus pronounce all the allophones of English /p/ in the same manner. The same is done in case of other two voiceless plosives as well viz. /t/ and /k/. Thus while comparing the segmental phonemes we have to see as well whether there is any difference at the allophonic level. It is true, however, that "a speaker who fails to make allophonic distinction will sound foreign but be instantly comprehensible, whereas one who fails to make phonemic distributions will in certain contexts confuse the hearer." (Bright and McGregor, 1970).

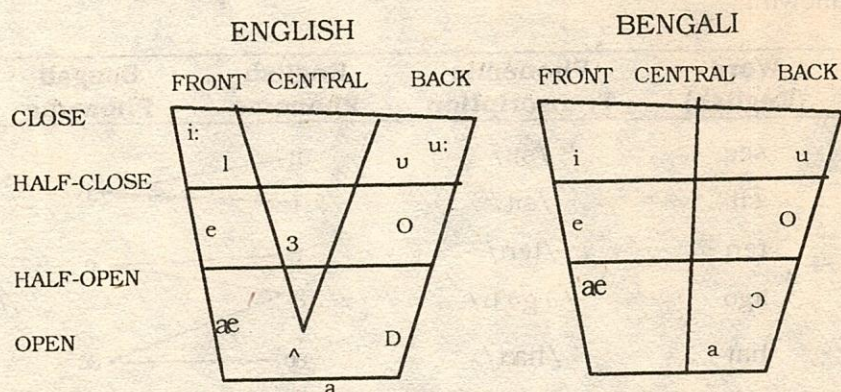
Difference in distribution of the same sound existing in both the languages may also create problems: for example in Bengali /r/ does not occur after /th/ and since the speakers of that language generally equate English /θ/ with Bengali /ṭh/, it is likely that they will face difficulty in pronouncing the English word 'threat'. Thus we have also to make an enquiry about the 'environments' and 'sequences' of the two sets of phonemes as well, if we are really interested in finding out the causes of most of the problems that the speakers of Bengali face in pronouncing English correctly.

Vowels of English and Bengali

There are as many as twelve vowel-phonemes in English and fourteen in Bengali. The latter has got two sets of vowels—oral and nasal, having seven vowel-phonemes each while English has got only oral vowels. This proves that so far as vowel sounds are concerned, these two languages have got separate sound structures:

English Vowels	Bengali Vowels
Front : i:, ɪ, e, æ	ĩ, iẽ, ẽ, æẽ
Back : u:, ʊ, o:, D,ɑ:	ũ, ũ, ɔ, ɔ, ɔ
Central : ə, ʌ	ã, ă

To show qualities of English and Bengali vowels comparatively, we may make use of the Cardinal Vowel diagrams; if we place the vowels of both the languages in the two separate diagrams side by side, the difference or similarity of their qualities will be clear. Let us exclude the Bengali nasal vowels for the time being as there is no nasal vowels in English.



If we look at these diagrams we can easily find out that in the front-close area there are two vowels in English viz., /i:/ and /ɪ/ whereas there is only one in Bengali viz., /i/. In the back-close area there are two vowels in English viz., /u:/ and /ʊ/ whereas there is only one in Bengali viz., /u/. In the central area there are as many as three vowels in English viz., /ə/, /ɜ:/ and /ʌ/ whereas there is only one vowel in Bengali viz., /a/. In the back area there are as many as five vowels in English viz., /u:/, /ʊ/, /o:/, /ɒ/ and /ɑ:/ whereas there are only three vowels in Bengali viz., /u/, /o/ and /ɔ/.

Similarities and Differences

According to Bright and McGregor (1970) "when we start to listen to a foreign language, we hear some of the sounds as 'the same' as those in our native language and some as 'different'. We are generally wrong. They are much more likely to be all different but the ones we think are the same are near enough for us to make a phonemic identification. It is extremely difficult to hear

unfamiliar phonemes. We tend instead to hear the nearest familiar one and to ignore the difference as insignificant." (pp. 179). We found these observations absolutely true at least in case of the native speakers of Bengali trying to speak English. If we consider their idea of the similarity of English vowel sounds to those of Bengali, we can have a picture, more or less, like the following:

Word (English)	Phonemic Transcription	English Phoneme	Bengali Phoneme
see	/si:/	i:	i
sit	/sit/	I	
ten	/ten/	e	e
ago	/ə gə u/	ə	
hat	/hæt/	æ	æ
cup	/kʌp/	ʌ	a
arm	/a:m/	ɑ:	
bird	/bɜ:d/	ɜ:	
got	/gɒt/	ɒ	ɔ
saw	/sɔ:/	ɔ:	
put	/put/	ʊ	u
too	/tu:/	u:	

This picture appears to be almost correct. Since length is not phonemic so far as Bengali vowels are concerned, the Bangladeshis generally do not distinguish between the pronunciation of /i:/ and /i/ or /u:/ and /u/. Thus there is no distinction in their pronunciation of 'ship' /ʃɪp/ and 'sheep' /ʃi:p/ or 'pull' /pʊl/ and 'pool' /pu:l/. Since in Bengali there is no sound exactly identical to English /ʌ/ or /ɑ:/ or /ɜ:/ Bengali-speakers generally fail to pronounce them correctly; for each of these sounds they use the only one sound of their mother-tongue viz. /a/. Thus in their pronunciation of the English words like 'tut' /tʌt/ 'turn' /tɜ:n/ and 'tart' /tɑ:t/ generally there is no

distinction in the vowel sounds. In the same manner, most of the Bengali-speakers pronounce /e/ or /æ/ for 'schwa' (i.e. /ə/) since there is no 'schwa' in their language.

We would like to mention in this connection that, there is no equivalent of Bengali /o/ in English and hence Bengali-speakers generally pronounce the English diphthong /ə u/ as Bengali /o/, but we will discuss it later when we take up diphthongs for contrastive study.

The English phoneme /i:/ as in the words 'even', 'reason', 'people', 'piece' etc. has got no exactly similar counterpart in Bengali. The Bengali near-similar phoneme is /i/ which is less closed and less front than the English /i:/. That is why in the pronunciation of the majority of Bengali-speaking people, /i:vn/ turns into 'even' /iven/, 'reason' /ri:zn/ turns into /ridzon/, 'people' /pi:pl/ turns into /pipol/ and 'piece' /pi:s/ turns into /pis/. [there are no word-final consonant-clusters in Bengali like vn, zn or pl, that is why generally a vowel-sound occurs between those clustering consonant sounds; we will discuss that point later.] But English /i:/ and Bengali /i/ are similar in the sense that both are in the region of 'front-close'.

The English phoneme /I/ as in 'rich', 'rhythm', 'pretty', 'village' etc., has its closest counterpart in Bengali phoneme /i/ as both are in the region of 'front-close', but Bengali /i/ is less centralized and more high than the English /I/. That is why in the pronunciation of Bangladeshis 'rich' /ritf/ turns into /ric/, 'rhythm' /riðm/ into /ridom/, 'pretty' /prɪtI/ into /preti/ and 'village' /vilidʒ/ into /bhiledʒ/ etc. (in the pronunciation of the last syllable of the last word, it is the spelling pronunciation that the Bengali speaking people follow).

For the English phoneme /e/, as in 'set', 'head', 'many' etc. there is a similar (not exactly the same) phoneme in Bengali as well viz. /e/. Both of them are front, spread and between half-close and half-open positions. The only difference is that while English /e/ sound is exactly at the middle of half-close and half-

open positions, Bengali /e/ is a bit closer to half-close than to half-open position; but nevertheless, it can be transferred in pronouncing the English sound /e/ without causing any affectation and that is exactly what the Bengali-speaking people do.

The greatest contrast between English and Bengali vowel-sound structures is, perhaps, the absence of 'schwa' in Bengali. But among all the vowel sounds of English, 'Schwa' is of greatest frequency. So its absence in Bengali creates a great problem for the native-speakers of Bengali learning to speak English. This is absolutely a new sound to them. They sometimes use /e/ and sometimes /æ/ for the word-initial schwa e.g. 'again' /əgeɪn/ turns into /egen/ and 'above' /əbʌv/ turns into /æbabh/. But in the word-medial and word-final positions, their choice of a substitute depends on the spelling of the sound. Thus in their pronunciation the word 'women' /wʊmən/ becomes /wuman/, 'mother' /mʌðə(r)/ becomes /mada(r)/, but the word 'problem' /prɒbləm/ becomes /problem/. Since schwa is a new sound to them and since it remotely resembles a number of vowel-sounds in Bengali, there is no uniformity in their substituting this sound. They can transfer any of those remotely resembling sounds for it.

The only vowel phoneme which has a identical counterpart in Bengali is the open front spread vowel /æ/. There is no basic difference in the production of this sound in Bengali and hence speakers of Bengali can produce it correctly.

But problem lies with the open central unrounded short vowel /ʌ/ which occurs in words like 'cup' 'jump', 'uncouth' etc. There is no sound in Bengali which is exactly similar to this sound. The Bengali vowel which can be considered as nearest to it is the central open unrounded vowel /a/. That is why in the pronunciation of the native speakers of Bengali 'cut' /kʌt/ turns into /kat/, dʒʌmp/ into /jamp/. Nevertheless, it should not create much problem for the listeners provided /a/ is not

lengthened while pronouncing English words in which /ʌ/ occurs, because as the length in vowels is not phonemic in Bengali, the native speakers of it may not be conscious of the fact the /ʌ/ is essentially a short vowel and hence if its substitute /a/ is lengthened, the listeners may take it for another English vowel viz., the open back long vowel /ɑ:/ and get confused, for the word 'cut' /kʌt/, would then turn into 'cart' /kɑ:t/.

There is no vowel sound in Bengali which is exactly the same as English /ɑ:/ phoneme occurring in words like 'art', 'calm', 'party', 'far' etc. There is, however, a remotely similar sound which the Bengali-speakers may tend to transfer while pronouncing /ɑ:/ viz., the Bengali /a/. This is said to be remotely similar to /ɑ:/, because this also is an open unrounded vowel, but there is a difference between the two. While English /ɑ:/ is considered to be a 'back' sound, Bengali /a/ is a 'central' sound. Still there should not be much problem on the part of the listeners provided /a/ is lengthened while pronouncing English words in which /ɑ:/ occurs which is not often done by the native speakers of Bengali. Thus in their pronunciation, one can rarely find out any distinction between such pairs of words as 'calm' and 'come', 'last' and 'lust', 'mast' and 'must' and so on.

The English vowel phoneme /ɜ:/ which occurs in words like 'bird', 'hurt' etc. is absolutely a new sound to the Bengali-speakers and hence most of them fail miserably in pronouncing this sound correctly. They generally substitute this sound also by the same Bengali sound /a/ which is absolutely wrong; for although both English /ɜ:/ and Bengali /a/ are central vowels, while the former is a half-close sound, the latter is an open one and hence one of them can never be a substitute for the other. Thus in the pronunciation of Bengali speakers /bɜ:d/ turns into 'bard', /bɜ:n/ turns into 'barn' and /hɜ:t/ into 'hart' which puts the listeners into great confusion because in that case 'bird' is transformed into another English word 'bard', 'burn' is transformed into another word 'barn' and 'hurt' into 'heart' and so on.

As for English open back rounded vowel /D/ as in words like 'hot', 'got' 'orange' etc., there is an equivalent in Bengali which is almost identical viz., /ɔ/. That is why generally the Bengali speakers can produce this sound, more or less correctly wherever it occurs in an English word. The only problem is that since most of these speakers often follow the spelling for determining the pronunciation of a particular word, they sometimes commit mistakes e.g. for the word 'orange' they say /oreinj/ instead of /ðrindʒ/ which is the correct (RP) pronunciation for that word. This is, however, a slight difference in English /D/ and Bengali /ɔ/; although both of them are back rounded vowels and the position of both is between half-open and open, while English /D/ is exactly at the middle of half-open and open positions, Bengali /ɔ/ tilts at the half-open position.

There is no phoneme in Bengali like English mid back rounded long vowel /ɔ:/ as in 'all', 'bought', 'saw' etc. The closest phoneme in Bengali which the Bengali speakers generally tend to transfer in its pronunciation is the Bengali phoneme /ɔ/. But differences are there between these two sounds. For example, English /ɔ:/ is a mid sound i.e. it is exactly at the middle of half-close and half-open positions, but Bengali /ɔ/ sound can at best be attributed as half-open, that is why Bengali speakers sometimes substitute English /ɔ:/ by Bengali /ɔ/ which is a half-close sound. Secondly, English /ɔ:/ is always a long sound unlike Bengali /ɔ/ (or/o/) which can be either long or short. If /ɔ/ becomes long in the pronunciation of English words containing /ɔ:/, it will be alright for the listeners, but if /ɔ/ becomes short, it definitely will create problem for them. And in case Bengali /ɔ/ is substituted for English /ɔ:/, it is very likely that the listener will hear 'boat' /bɔt/ for 'bought' /bɔ:t/ and 'sow' /sɔ/ for 'saw' /sɔ:/ . Thus in the speech of Bengali speakers /ɔ:/ generally turns into /ɔ/ /sɔ:/ into /so/ and /bɔ:t/ into /bot/. In the present day English (RP) /ɔ:/ has become more close and hence resembles, to a large extent, the Bengali Vowel /o/, but the difference in length still exists.

For English short half-close centralized-back rounded vowel /ʊ/ and close back rounded long vowel /u:/, there is only one Bengali vowel viz., the close back rounded vowel /u/. It is less back and less close than English /u:/, but more close and less centralized than the English vowel /ʊ/; it can be either long or short without affecting meaning. Thus English 'pull' and 'pool' become the same word in the speech of native Bengali speakers. They cannot distinguish between the members of the pairs of English words like 'suit' /su:t/ and 'soot' /sut/, 'wooded' /wu:d/ and 'wood' /wud/, 'cooed' /ku:d/ and 'could' /kud/ and so on which confuses the listeners a lot.

There are some vowel phonemes in English which are absolutely new to the Bengali-speaking students. The presence of some new vowels becomes obvious simply because of the fact that there are as many as twelve vowels in English while only seven oral vowels in Bengali. English vowels /ə/, /ɜ:/ and /ʌ/ are absolutely new to the Bengali-speaking people. Since there is no sound even remotely equivalent to any of these sounds in Bengali, they must be taught consciously, carefully and systematically. All of these sounds are central vowels and especially /ə/ has got the highest frequency in English and is the most important as it occurs in almost every English word with more than two syllables and in most of the weak forms. Thus in the words of Kenworthy (1987 pp. 15), "In order learners to speak English with correct stress and rhythm and to pronounce words so that they can be identified by English listeners, 'schwa' is essential. Even if you do work on no other sound, some attention will probably need to be devoted to schwa". Not only that, we would suggest that even if no other phonetic or phonemic symbol is used while teaching English sounds to the learners, a symbol for schwa must be presented to them as there is no letter in the English alphabet that only represents schwa and as almost every vowel letter in English can represent it e.g. 'about', 'pocket', 'pupil', 'contain', 'circus' etc. The English vowel /ɜ:/ is almost like schwa, the only difference is in

the length. The short open central sound /ʌ/ is, however, too short to be pronounced correctly by the Bangladeshis who would require sustained practice to acquire it. Failure to pronounce these vowel sounds correctly will lead to mutual unintelligibility in conversation and may even cause a break-down in communication while a discussion is going on. For not only will the native speaker of Bangla fail to make him understood to his listener but he, on his part, also may not understand much of what is spoken to him by the other person who, let us suppose, is either a native speaker of English or has a native-like proficiency in English.

Bengali and English Diphthongs

It is from Greek that the word 'diphthong' meaning 'two-sounds' has derived ('di'+ 'phthong'). But whatever may be its source or meaning, phonologically a diphthong functions as a single unit of sound forming the core of a single syllable. That means although it is a cluster of two vowel sounds, they are spoken so closely together that they, for all practical purposes, become one unit of sound having a single syllabic pick.

English diphthongs conform absolutely to this definition. But Bengali diphthongs are said to be comprising a vowel and a semi-vowel which gives rise to a controversy. For 'a semi-vowel' is essentially a consonant sound like English /w/ and /j/ or Bengali /j/ which functions as a consonant; but the cluster of a vowel and a consonant cannot be regarded as a diphthong. In fact, however, there is no real controversy regarding Bengali semi-vowels as the so-called four 'semi-vowels', one of which only can be the second and non-syllabic component of a Bengali diphthong, are not consonantal at all i.e. they do not function as consonants. They are vocalic in nature and their only function is to be the second component of a diphthong. That is why they are treated not as independent phonemes, but as allophones of four pure oral vowel-phonemes viz. /i/, /e/, /o/ and /u/. They are semi-vowels in name only and are so-called only to be distinguished

from other distinctive full-fledged independent vowel-phonemes of Bengali. But we are sceptical about the justification of attributing these sounds as 'semi-vowels' any longer in any phonological description of Bengali. For as they are clearly vocalic sound without having any consonantal function and as they are not independent phonemes but only allophones with very limited distribution, attributing them as 'semi-vowels' causes more confusion than convenience in any phonemic description, since a separate semi-vowel is there among Bengali consonants, viz. /j/.

There are as many as eighteen diphthongs in Bengali, but only eight in English. Thus these two languages differ a lot in the structure of their diphthongs as well.

Bengali Diphthongs	English Diphthongs
1. <i>lii</i> / as in <i>di</i> / 'I give'	1. /ei/ as in 'fate'
2. <i>lei</i> / as in <i>fei</i> / 'that'	2. /ai/ as in 'dive'
3. <i>lai</i> / as in <i>jai</i> / 'I go'	3. /oi/ as in 'coy'
4. <i>loi</i> / as in <i>boi</i> / 'book'	4. /iə / as in 'fear'
5. <i>lui</i> / as in <i>fui</i> / 'I lie'	5. /eə / as in 'fare'
6. <i>leol</i> / as in <i>Keol</i> / 'somebody'	6. /uə / as in 'cure'
7. /æol / as in <i>naeol</i> / 'be fond of'	7. /au/ as in 'now'
8. <i>laol</i> / as in <i>jaol</i> / (you) go'	8. /ə u/ as in 'home'
9. <i>lool</i> / as in <i>hlool</i> / (you) be'	
10. <i>lool</i> / as in <i>fool</i> / (you) go to bed'	
11. <i>laeel</i> / as in <i>daeel</i> / (He / she) gives'	

12. /ae/ as in /Jae/ (He/she) goes'
13. /oe/ as in /choe/ six'
14. /oe/ as in /foe/ (he/she) goes to bed'
15. /iul/ as in /fiuli/ 'a kind of flower'
16. /eu/ as in /keute/ 'a kind of poisonous snake'
17. /au/ as in /dau-dau/ 'fire- burning'
18. /ou/ as in /nouka/ 'boat'

Similarities and Differences

Thus we can clearly find out from the above inventory of both Bengali and English diphthongs that of the eight diphthongs of English, only three have got their equivalent counterparts in Bengali viz., /ei/, /ai/ and /au/. These sounds are almost 'identical' in both the languages. For the rest five sounds in English, we do not have identical sounds in Bengali. That means these sounds have got to be taught very carefully and consciously with a lot of drilling to the speakers of Bengali while teaching English to them.

There is practically no difference between the English diphthong /ei/ and the Bengali diphtong /ei/ inspite of the fact that there are slight differences in the articulation of English /e/ and Bengali /e/ and that of English /i/ and Bengali/i/. But since each member of each pair is phonetically very close to the corresponding member of the other pair, they make little difference when they are combined into two separate diphthongs of two languages. Thus we have the English diphthong in English words like 'say' play', 'same', 'pain' etc, and an identical Bengali diphthongs in words like /khei/ 'continuity', /ei/ 'this'. /fei/

that', /nei/ 'there is not' etc. But inspite of the presence of this diphthong in Bengali, the speakers of Bengali are often found to pronounce the word 'same' as simply /sem/, 'play' as simply /ple/, 'say' as simply /se/ and so on.

We have in the list above English /ai/ and Bengali/ ai/ which are almost identical sounds despite there being very slight differences in the articulation of two corresponding vowels of the two diphthongs individually. Thus we have the English diphthong in words like 'five', 'nice', 'bite' etc. and an identical Bengali diphthong in Bengali words like /bhai/ 'brother', /jai/ 'I go', /cai/ 'I want' etc.

We have in the above list English diphthong /au/ and Bengali diphthong /au/ which are identical sounds despite there being very slight differences in the articulation of individual corresponding vowels of English and Bengali. Thus we have the English diphthong in words like 'now', 'plough', 'how', 'vow' etc. and an identical Bengali diphthong in Bengali words like /cau/ '(you) want' /phau/ 'an extra', /lau/ 'pumpkin' /Khau/ '(you) eat' etc.

For English /ɔɪ/ as in 'boy', we have, however, a similar though not identical, sound in Bengali viz. /oi/ as in /boi/ 'book'. Although the main part or the syllabic component of the diphthong /oi/ differs from that of English /ɔɪ/ (for while the English [o] is almost an open sound, the Bengali /o/ is a half-close sound), yet the Bengali-speakers do not face much trouble in producing this sound or in understanding it by listening. They can easily realize the difference as there is an /o/ phoneme in Bengali as well.

The English diphthong /əu/ as in 'boat' has got a near-equivalent in Bengali viz., /ou/ as in /bou/ 'wife'. Although there is a little difference in the pronunciation of the first components of these two diphthongs, that small problem should not be much difficult to surmount on the part of the native speakers of Bengali once they learn to pronounce schwa. But the real problem lies

elsewhere. In the words of Hai and Ball (1961), "A common fault with some Bengali speakers of English is that they say only the first part of the diphthong and ignore the second part. In consequence the diphthong, which in English is by nature longer than a simple vowel, appears as a short vowel..... the formation of an English diphthong is a movement (or glide) from one vowel position to another. Bengali speakers stick at the first position (except in case of ai, ei and au) or pronounce the two vowels separately. Thus /meik/ make is heard as /mek/, /bɒt/ 'boat' as /bot/, /tuð(r)/ 'tour' as /tur/, /geit/ gate as /get/, /hiər/ hear as /hiar/, /ðeə/ (there) as /dear/. This substitution of one phoneme by another which is quite different is a major cause of confusion and misunderstanding." (pp. 31)

But the above observation is true especially of those English diphthongs for which there is no counterpart or equivalent sound in Bengali viz., /iə /, /eə /, /uə / and /ə u/. It is not true of all the English diphthongs in the speech of the native speakers of Bengali. For example, no Bengali-speaker would pronounce 'dive'/daiv/ as simply /dav/ or 'coy' /koi/ as simply /ko/ or 'now' /nau/ as simply /na/. But they generally pronounce the word 'home' as /hom/, 'boat' as /bot/, 'fare' as /phear/ (two syllables) and 'fear' as /phiar/ (two syllables) and sometimes, not always, even the word 'fate' as simply /phet/ although there is an identical disphthong in Bengali.

As most of the speakers of Bengali follow spelling pronunciation, they always pronounce the word-final /r/ in English as they do in speaking their L₁. And not even the very highly educated people of Bangladesh (except, or course, those who had had their schooling in the medium of English) are found to pronounce the English diphthong /əu/ properly. Thus in their English speech the word 'no' /nə u/ becomes /no/, 'note' /nə ut/ becomes /not/ and 'noble' /nə ubl/ becomes /nobl/; but the word 'noise' /nɔɪz/ never becomes /noz/, it is always pronounced as /nɔɪz/. Thus we cannot make a sweeping generalization, as

has been done by Hai and Ball, that the native speakers of Bengali either pronounce only the first component of an English diphthong leaving the second component unpronounced and making the English diphthongs short in their speech thereby, or they pronounce them in two syllables instead of one making them thereby, nondiphthongal altogether. Actually this trouble lies mainly with their pronunciation of those diphthongs of English which are not present in their L_1 , and for the reason that in their attempt to produce those unfamiliar sounds, they generally follow the spelling pronunciation instead of the R.P.

The three remaining diphthongs of English viz., /ɪə /, /eə / and /ʊə / all of which end in schwa appear to be very difficult for the native speakers of Bengali to pronounce correctly. Their real problem with these diphthongs is in the articulation of schwa which is not there in their L_1 . In these cases, they generally replace schwa with Bengali /a/ and in the process they produce two syllables out of one, as a result of which the diphthongs no longer remain diphthongs. They become clusters of two vowel sounds in two consecutive separate syllables. Thus in their speech the English word 'pierce' /piərs/ turns into /pi-ars/, the word 'chair', /tʃeə(r)/ turns into /cear/, the word 'tenure' /tenjʊə(r)/ turns into /tenjuar/ and so on. That is why in their speech in English these sounds often become unintelligible to the listeners.

Bengali and English Consonants: Inventories

Following are the two separate charts for Bangali and English Consonant Phonemes showing the manner and place of articulation (and also some other information e.g. whether voiced or voiceless, whether aspirated or unaspirated etc.) of every phoneme included in each chart:

	Bilabial	Labio-dental	Dental	Alveolar	Palatoalveolar	Palatal	Velar	Glottal
	-v +v	-v +v	-v +v	-v +v	-v +v	-v +v	-v +v	
Plosives	p b			t d			k g	
English Affricates					tʃ dʒ			
Fricatives		f v	θ ð	s z	ʃ ʒ			h
Nasals	m			n			ŋ	
Laterals				l				
Frictionless continuants				r				
Semi-vowels	w					j		

	Bilabial	Dental	Alveolar	Retroflex	Alveopalatal	Velar	Glottal
	Aspd.	Aspd.	Aspd.	Aspd.	Affrd. Aspd. Affrd.	Aspd.	
	- +	- +	- +	- +	- +	- +	
Plosives -Vd.	p ph	t _n th _n		ʈ th	ɕ ch	k kh	
+Vd.	b bh	d _n dh _n		ɖ dh	ʝ Jh	g gh	
Bangla Nasals	m		n			ŋ	
Laterals			l				
Fricatives		s					h
Flaps			r	ɽ			
Semi-vowels							

It is quite clear from these two charts that while English has got twenty four consonants, Bengali has got as many as thirty consonants; that while the dominating group among Bengali consonants are the plosives, that among English consonants are fricatives; that each of the nasal phonemes of English has its identical counterpart in Bengali; that there is only one lateral consonant both in English and in Bengali and so on.

Let us now put each of the Bengali and English consonants side by side with an example for each of these sounds in actual speech:

Bengali	English
1. /p/-/pat/'jute'	1. /p/-/pɑ:t/'part'
2. /b/-/baɪ/'living'	2. /b/-/bʌs/ 'bus'
3. ph/-/ph l/ 'fruit'	3. /t/-/tɪl/ 'till'
4. /bh/-/bhalo/'good'	4. /d/-/do:n/ 'dawn'
5. /t̪/-/tall/'clapping'	5. /k/-/kʌt/ 'cut'
6. /d̪/-/dan/'donation'	6. /g/-/geɪt/'gate'
7. /th/-/thala/'plate'	7. /tʃ/-/tʃɜ:tʃ/'church'
8. /dh/-/dhan/'paddy'	8. /dʒ/-/dʒʌdʒ/'judge'
9. /t̪/ /tana/ 'to pull'	9. /f/-/feɪl/'fail'
10. /d̪/-/dana/ 'wing'	10. /v/-/veɪn/'vain'
11. /th/-/thoka/'knock'	11. /θ/-/θɪn/'thin'
12. /dh/-/dhok/'gulp'	12. /ð/-/ðen/'then'
13. /c/-/cokh/'eye'	13. /s/-/si:t/'seat'
14. /J/-/Joɔa/'pair'	14. /z/-/zəʊn/'zone'
15. /ch/-/chata/'umbrella'	15. /f/-/feɪm/'shame'
16. /Jh/-/Jhata/'broom'	16. /ʒ/-/vɪʒn/'vision'
17. /k/-/kolá/'banana'	17. /h/-/heɪt/'hate'
18. /g/-/gola/'the neck'	18. /m/-/mes/'mess'
19. /kh/-/khæla/'the game'	19. /n/-/naɪs/'nice'
20. /gh/-/ghaɔ/'the shoulder'	20. /ŋ/-/ɪŋlɪʃ/'English'
21. /s/-/islam/ 'the Islam'	21. /l/-/let/'let'

- | | |
|---------------------------------|------------------------|
| 22. /f/-/furu 'the beginning' | 22. /r/-/reil/'rail' |
| 23. /h/-/hat/'a village market' | 23. /w/-/weist/'waste' |
| 24. /m/-/ma/'mother' | 24. /j/-/jes/'yes' |
| 25. /n/-/na/'no' | |
| 26. /ŋ/-/kaŋ al/'destitute' | |
| 27. /l/-/laŋ ol/'plough' | |
| 28. /r/-/re/mi/'silken' | |
| 29. /t/-/bat/'growth' | |
| 30. /j/-/mojur/'peacock' | |

Similarities and Differences

Let us now try to find out the similarities and differences between the two sets of consonants. For the sake of convenience let us divide both the sets into several groups on the basis of their manner of articulation as plosives, fricatives, affricates etc. and take up one group after another of both the sets for our discussion.

The Plosives

The following facts about plosives of both English and Bengali are evident from the charts and tables of consonant sounds above:

- (a) There are as many as twenty plosives in Bengali whereas in English there are only six.
- (b) In Bengali, plosives are classified in terms of five places of articulation e.g. bilabial, dental, (alveolar) retroflex, alveo-palatal and velar; but in English, they are classified in terms of only three places of articulation e.g. bilabial, alveolar and velar.
- (c) Bengali alveo-palatal plosives are affricated, meaning they are having some qualities of an affricate sound. Besides in

Bengali there is an extra series of plosives, viz. Aspirated Plosives which also can be divided into voiceless (e.g. /ph, th, th, ch, and kh/) and voiced (e.g. /bh, dh, Jh and gh/).

- (d) The English plosives /t/ and /d/ are alveolar; Bengali has got two sets of plosives instead of one in the front region, e.g. dental /td/ and retroflex (alveolar) /ṭ, ḍ/. Bengali retroflex sounds are always alveolar. That is why usually Bengali retroflex plosives are substituted for English alveolar ones.
- (e) We know from the description of English phonemes that each of the three English voiceless plosives viz., /p, t, k/ has got an aspirated allophone which regularly occurs in stressed initial positions e.g. 'pat' [p^hæt] 'tan' [t^hæn], 'cat' [k^hæt]. Bengali /p, t, k/ do not have any allophone but the phonology of Bengali includes voiceless aspirated plosives as separate phonemes e.g. /ph/, /th/, /kh/. Thus of the six English plosives e.g. /p, b, t, d, k, g/, there is no problem for a native speaker of Bengali in producing the voiced /b/ and /g/ as identical plosives are there in Bengali as well. But for English voiced alveolar plosive /d/, they generally use Bengali retroflex plosive /ḍ/; this, however, does not create any serious problem for listening as the Bengali /ḍ/ also is voiced and it is also produced in the alveolar region.

There should not be any problem in the pronunciation of English voiceless plosives /p/ and /k/ either, as they are identical to Bengali /p/ and /k/ respectively, but problem arises as Bangladeshi speakers do not generally produce them as aspirated plosives in stressed initial position which gives rise to serious hindrances to intelligibility on the part of the listeners if they are the native speakers of English. For unless aspirated, they hear /p/ as /b/, /t/ as /d/ and /k/ as /g/ in the stressed initial position of English words.

Like /ḍ/, English /t/ is also pronounced by the Bangladeshis as Bengali /ṭ/, but again it does not give rise to much difficulty for the listeners as the latter shares with the

former the common properties of being voiceless plosive and being produced in the alveolar region. But problem arises only when the substitute /t/ is not aspirated in the stressed initial position.

Distribution

/p/ in English occurs in all positions, e.g. /pin/, /peipə/, /paip/; /p/ in Bengali also occurs in all positions, e.g. /poth/ 'path', /fopoth/ 'vow', /fap/ 'curse'. Only in the initial (stressed) position English /p/ is aspirated while Bengali /p/ is not. So Bangladeshis fail to aspirate English /p/ in the initial stressed position.

/b/ in English occurs in all positions e.g. /bæd/, /nɒubl/, /kʌb/. /b/ in Bengali also occurs in all positions e.g. /bod/ 'bad' /abar/ 'again' /jobab/ 'reply'. In no position is this phoneme aspirated either in English or in Bengali. In the final position, this phoneme tends to lose its voice to a large extent both in English and in Bengali, e.g. /fob/ and /dab/ respectively. Thus these two sounds can be attributed as identical in their distribution as well.

English /t/ occurs in all positions, e.g. /top/, /stop/, /hot/. Bengali /t/ its Bangladeshi substitute, also occurs in all positions e.g. /taka/ 'money'. /mota/ 'fat', /pat/ 'jute'. Only in the initial stressed position English /t/ is aspirated while Bengali /t/ is not, which gives rise to problems in listening.

/d/ in English occurs in all positions, e.g. /dog/, /wedɪŋ/, /rod/. /d/ its substitute in Bengali, occurs in the initial position e.g. /dak/ 'post' but in the word-medial position it occurs only in cluster with a preceding /n/ e.g. /gunda/ 'hooligan' and in syllable final (not word-final) position only in geminate cluster e.g. /boddo/ 'too much'. But this limitation in the distribution on Bengali /d/ does not prevent it, in any way, from functioning as a substitute for English /d/; for while used in English speech it may sound a bit 'foreign' but does not become unintelligible.

/k/ in English occurs in all positions, e.g. /kæf/, beikt/, /rɒk/. /k/ in Bengali also occurs in all positions e.g. /kal/ 'tomorrow', /ukil/ 'advocate', /æk/ 'one'. Only in the initial stressed position English /k/ is aspirated while Bengali /k/ is not, which gives rise to problems in listening.

/g/ in English occurs in all positions, e.g. /gɜ:l/, /gigl/, /big/. /g/ in Bengali also occurs in all positions, e.g. /gun/ 'quality', /agun/ 'fire', /dag/ 'stain'. In no position is this sound aspirated either in English or in Bengali. Thus /g/ in English and /g/ in Bengali can be attributed as identical in their distribution as well.

The Fricatives

From a comparative study of the fricatives of both English and Bengali, the following points of contrast emerge:

- (a) There are only three fricatives in Bengali viz. /s, f, h/ whereas there are as many as nine in English viz. /f, v, θ, ð, s, z, ʃ, ʒ, h/.
- (b) The English fricatives can be classified in terms of five places of articulation e.g. labio-dental, dental, alveolar, palato-alveolar and glottal; they can be further distinguished in terms of voice and voicelessness. Bengali fricatives, on the other hand, can be classified in terms of three places of articulation, e.g. dental, alveo-palatal and glottal; and except the glottal fricative, there is no voice-voiceless distinction in these sounds, they are always voiceless. Bengali glottal fricative has a voiced allophone [h] as well as a voiceless allophone [h̥].
- (c) Thus the rest six fricative sounds in English are generally replaced by other Bengali sounds (not fricatives) in English speech of the native Bengali speakers.

English labio-dental voiceless fricative /f/ is generally replaced by Bengali aspirated bilabial voiceless plosive /ph/. To a native speaker of English this would naturally sound un-

English, but he would be able to understand it nonetheless, for it is a voiceless labial consonant and hence resembles English /f/ to a large extent. English /f/ sound, however, can be easily taught to the learners of Bangladesh by asking them simply to use the tip of the upper front teeth against the lower lip to produce this sound instead of two lips. The friction will then come automatically.

For English labio-dental voiced fricative /v/, generally Bengali aspirated bilabial voiced plosive /bh/ is used. It may sound foreign, but does not become unintelligible altogether as both /v/ and /bh/ are voiced labial consonants. English /v/ also can be easily taught using the same method as that of /f/.

For English voiceless dental fricative /θ/, generally Bengali voiceless aspirated dental plosive /tʰ/ is used. This also sounds foreign, but not unintelligible as the latter, like the former, is a voiceless dental consonant. This sound can be easily taught by asking the learners to protrude the tip of their tongue between the ends of the upper and lower front teeth while producing it. This process would result in bringing about the friction automatically.

English voiced dental fricative /ð/ is generally replaced by Bengali voiced dental plosive /d/. This also sounds a bit foreign, but not unintelligible as the latter shares with the former the properties of being voiced and dental. This sound also can be easily taught in the same process as suggested for teaching /θ/.

Producing English voiceless alveolar fricative /s/ is no problem for the native speakers of Bengali as there is a similar sound in Bengali as well e.g. dental voiceless fricative /s/, although this sound can be attributed as post-dental at the most, not alveolar. Nevertheless, it does not create any problem of intelligibility as it is a voiceless fricative like English /s/ and is produced in almost the same region of the vocal tract as the English /s/ is done.

But the native speakers of Bengali generally fail to produce the English voiced alveolar fricative /z/ as this sound is not there at all in Bengali. They, therefore, replace it with Bengali alveo-palatal affricated voiced plosive /J/ which is very much different from English /z/ and hence it gives rise to the problem of intelligibility on the part of the listeners.

Producing English voiceless palato-alveolar fricative /f/ is no problem for the Bangladeshis, as there is a identical sound in Bengali-the voiceless alveo-palatal fricative /f/. But they fail to produce English voiced palato-alveolar fricative /ʒ/ as there is no such sound in Bengali at all. They, therefore, replace it with Bengali voiced alveo-palatal affricated plosive /J/ which is quite different from English /ʒ/ and hence gives rise to problem for the listeners, especially if they are the native speakers of English.

English glottal fricative /h/ is generally voiceless, but it has got a voiced allophone which is used in words like 'behind' /bihaɪnd/. Bengali glottal fricative, on the other hand, is generally voiced, but it has a voiceless allophone which is used in words like /nah/ 'an expression of denial'. In producing English /h/ phoneme, native speakers of Bengali often use its voiced allophone, when they should use the voiceless one, and this gives rise to a little problem in listening. But however odd the voiced /h/ may sound in word like 'how' /hau/, the phoneme does not become unintelligible altogether.

Distribution

English /f/ occurs in all three positions e.g. /fail/, /nefju:/, /la:f/; Bengali /ph/, its Bangladeshi substitute, also occurs in all three positions e.g. /phol/ 'fruit', /fɔphol/ 'successful', /saph/ 'clean'. Bengali /ph/ has got two allophones which are in complementary distribution. The allophone /ph/ which is bilabial aspirated plosive occurs only in word-initial positions, but the allophone [ɸ] which is a bilabial fricative, occurs in word-medial and word final positions. Thus the latter allophone

becomes more close to English /f/ than the former one. Native speakers of Bengali can produce /f/ as a fricative sound only in word-medial and word-final position; the distribution of the two sounds in question being similar, no problems arise out of substituting Bengali /ph/ for English /f/.

English /v/ occurs in all three positions e.g. /vein/, /evri/, /l^v/, Bengali /bh/, its Bangladeshi substitute, also occurs in all three positions e.g. /bhab/ 'feeling' /obhab/ 'want', /labh/ 'profit'. Bengali /bh/ loses its aspiration to a great extent in the word-medial and word-final positions. Thus there is no problem from the point of distribution for replacing English /v/ with Bengali /bh/ in speaking English.

English /θ/ occurs in all three positions, e.g. /θin/, /n^θm/, /uθ/. Bengali /th/, its Bangladeshi counterpart, also occurs in all three positions, e.g. /theke/ 'from', /pathor/ 'stone' /roth/ 'chaio'. The aspiration of Bengali /th/ is more frictionlike and hence no problem arises out of using it for English /θ/. No problem is there in distribution as well.

English /ð/ occurs in all three positions e.g. /ðen/, streñð en/, /su:ð/, although its voice is reduced in the word-initial and word-final positions. Bengali /d/, its Bangladeshi counterpart also occurs in all three positions, e.g. /dena/ 'loan' /nodi/ 'river', /mod/ 'wine'. Thus so far as distribution is concerned, no problem is there in using Bengali /d/ for English /ð/.

English /s/ occurs in all positions, e.g. /s^m/, /bisaid/, /mais/. Bengali /s/, on the other hand, occurs individually in all positions only in loan words e.g. /salam/, /kismot/, /hadis/ etc. It occurs initially and medially in Bengali words also only in cluster with other consonants e.g. /sneho/ 'affection' /osthir/ 'restless' etc. It does not occur finally even with other consonants except in loan words. But since those loan words have become a part of Bengali vocabulary and the native speakers of Bengali are habituated in producing Bengali /s/ in all positions, there is no problem in pronouncing English /s/ on their part in any position. Thus we may say that English /s/ and Bengali /s/ are identical in their distribution.

English /z/ occurs in all positions e.g. /zu:/, /leizi/, /lu:z/. Bengali /J/, its 'Bangladeshi counterpart, also occurs in all positions. Hence from the point of distribution there is no problem in using /J/ for English /z/. But Bengali /J/ differs altogether from English /z/ both in place of articulation (alveo-palatal versus alveolar respectively) and in manner of articulation (affricated plosive versus fricative). Hence /J/ cannot be used for English /z/.

English /f/ occurs in all positions, e.g. /fcp/, /steɪfn/, /ræf/. Bengali /f/ also occurs in all positions, e.g. /fef/ 'end' /afa/ 'hope' /āf/ 'fibre' Thus we may say that these two sounds are identical in their distribution as well.

English /z/ does not occur initially except in loan words like 'genre' /za:nɾə/. It occurs in medial and final positions e.g. /vɪzn/, /ru:z/. Since there is no such sound in Bengali, the native speakers of that language generally replace it by Bengali /J/ which occurs in all positions. But since this sound is altogether different from English /z/ (affricated alveo-palatal plosive versus palato-alveolar fricative), problem naturally arises in their pronunciation of English /z/ in both medial and final positions.

English /h/ occurs initially in pre-vocative position and medially in intervocalic positions e.g. /ho:k/ and /bihaɪnd/ etc. Bengali /h/ occurs in initial and medial positions only and also normally in prevocalic and intervocalic positions. Both these English and Bengali phonemes, however, have got two allophones each-voiced and voiceless which are in complementary distribution. In English the voiceless one is more frequent whereas in Bengali the voiced one is more frequent. It so happens that the native speakers of Bengali use a voiced [h] in an environment where generally a voiceless [h] is used in English. This gives rise to problems in listening.

The Affricates

The following facts may be stated about the affricates:

- (a) There are two affricates in English viz. /tʃ/ and dʒ/, but there is none in Bengali; there are, however, four affricated plosives in Bengali viz. /c/ /J/, /ch/, /Jh/.
- (b) In Bengali these four affricated plosives are classified into two groups on the basis of aspiration viz. /c,J/ and /ch, Jh/. In English affricates are not aspirated.
- (c) In the absence of any affricate phoneme in Bengali. English affricates /tʃ/ and /dʒ/ are generally replaced by Bengali unaspirated plosives /c/ and /J/ respectively. But being plosives the affrication of Bengali /c/ and /J/ is not as strong as that of English affricates /tʃ/ and /dʒ/.

Bengali voiceless alveo-palatal affricated plosive /c/ generally acts as the substitute for English voiceless palato-alveolar affricate /tʃ/. Although these two sounds resemble with each other in voicelessness and in their place of articulation, they differ partially in their manner of articulation since one is affricated plosive whereas the other is pure affricate. But this difference does not hamper intelligibility very seriously although Bengali /c/ would definitely sound foreign in English speech.

The same can be said of Bengali voiced alveo-palatal affricated plosive /J/ which is used as the substitute for English voiced palato-alveolar affricate /dʒ/.

Distribution

Both English /tʃ/, and its Bangladeshi substitute, /c/ occur in all positions, hence no problem arises from their distribution if /c/ is used for /tʃ/.

Both English /dʒ/ and Bengali /J/ occur in all positions and hence no problem arises out of their distribution if /J/ is used for /dʒ/.

The Nasal Phonemes

From a comparative study of the descriptions of English and Bengali nasal phonemes, the following facts emerge:

- (a) In English there are three nasal phonemes e.g. /m/, /n/ and /ŋ/. Although there are six nasal letters e.g. ঙ, ঞ, ম, ন, ণ, ং in Bengali alphabet, there are actually three nasal phonemes in Bengali as well, e.g. /m/, /n/, and /ŋ/. These are almost exact equivalents of English nasals.
- (b) The nasals are voiced sounds in both English and Bengali.
- (c) The velar nasal /ŋ/ occurs words-initially neither in English nor in Bengali.

Both in English and in Bengali /m/ is a bilabial nasal. No difference can be found between /m/ in English /meit/ and in Bengali /maɛla/ or in English /læmp/ and Bengali /lomba/ or in English /dʒæm/ and Bengali /Jam/. Both in English and in Bengali /n/ is an alveolar nasal. But this sound in English as well as in Bengali has got different allophones, which occur in different environments. We should better discuss it in the 'distribution' section below.

Both in English and in Bengali /ŋ/ is a velar nasal. Both occur only word-medially and word-finally, never word-initially. No difference can be found between /ŋ/ sound in English /sin/ and Bengali /fon/ or between English /mʌŋk/ and Bengali /onko/.

Distribution

It is clear from the examples cited above that both in English and in Bengali /m/ occurs in all three positions. In English /m/ is realized as a labio-dental nasal [m] when it is immediately followed by the labio-dental /f/ or /v/ e.g. 'comfort'. This fact, however, does not create any problem for a native Bengali speaker, for /m/ turns to be labio-dental in this case due to proximity of a labio-dental sound (assimilation). But the fact that /m/ becomes syllabic in certain English words like 'prism' or

'rhythm' causes problem for native Bengali speakers. Since they are not habituated in producing syllabic /m/, they often bring about a vowel sound before syllabic /m/. Thus in their pronunciation /prizm/ turns into /prizəm/, /riðm/ turns into /riðəm/ and so on. But this also is of no problem since in R.P. nowadays 'prism' is pronounced as /prizə m/ and 'rhythm' as /riðə m/.

In English /n/ occurs in all three positions e.g. /nain/, /bent/, /sin/. English /n/ is realized as labio-dental [m] when immediately followed by /f,v/ as in 'inform' or 'invent' etc. and as a dental nasal [n̪] when immediately followed by /θ/, /ð/ as in 'mouth', 'beneath' etc. These are no problems for Bangladeshis as these variations are due to assimilation and are there in producing Bengali /n/ as well. But it appears to be a problem to them to pronounce syllabic /n/ in certain English two-syllabic words like /mʌtn/. They generally fail to pronounce syllabic /n/. but then this type of /n/ is not very frequent in English.

Both in English and in Bengali /ŋ/ occurs word-medially and word-finally. But in Bengali [ŋ] is always produced in combination with a following [g] in intervocalic positions e.g. [dʌŋga] 'riot'. Naturally native speakers of Bengali would transfer this habit of theirs in speaking English which of course, does not make any serious problem in listening.

The laterals

Both in English and in Bengali there is only one lateral phoneme, e.g. voiced alveolar lateral /l/ and it occurs in all positions. But while Bengali /l/ has got no allophone, English /l/ has got two main allophones which are in complementary distribution. One is known as 'clear' [l] which is used before vowels and the semi-vowel /j/ e.g. 'lean', 'lose', 'lure' etc. The other is known as 'dark' [ɫ] which is used whenever the lateral is not followed by a vowel e.g. word-finally as in 'call', 'hell' etc. and before consonants other than /j/ as in 'milk', 'helm', 'health' etc.

A native speaker of Bengali cannot naturally be expected to maintain this delicate distinction in distribution of the two allophones which are not there in Bengali /l/.

This may lead to some problem, but we do not think that problem would be serious enough to hamper intelligibility, although it would sound foreign no doubt.

The Frictionless Continuant

English has got one post-alveolar frictionless continuant /r/. To substitute it there is one Bengali phoneme known as alveolar flap /r/. The English phoneme has got three allophones. The most frequent of them is the post-alveolar frictionless continuant [ɹ]. The other is the devoiced [ɹ̥] which occurs immediately, after voiceless consonants /p,t,k,f,θ/ e.g. 'train', 'frame' etc. These two allophones are in complementary distribution. Another allophone, a flapped [ɾ] which is in free variation may occur in intervocalic positions e.g. 'very', 'sorry' etc. Bengali /r/ has also got at least two allophones. The one is a trilling sound [r] with two or three taps instead of one which occurs initially or after a vowel e.g. /roʈh/, /are/ etc. The other is the most frequent flap sound [r] with a single tap which occurs in medial and final positions.

The problem that arises out of the difference in the manner of articulation and in distribution of the two sounds may lead to some minor problems of intelligibility. The phoneme as produced by the native speakers of Bengali naturally sounds odd, but nonetheless it is generally recognized by even the native speakers of English.

English /r/ occurs only in initial and medial positions and that also only immediately before vowels. It occurs finally when a word ending in 'r' or 're' is followed immediately by another word beginning with a vowel. But Bengali /r/ occurs in all positions irrespective of environments; only in medial and final positions it

is produced as a trill instead of a flap. The native speakers of Bengali, therefore, pronounce /r/ in all positions of English words according to their spelling which makes their English speech sound odd. So they should be taught to follow the rules mentioned above in using English /r/ be it a trill or a post-alveolar frictionless continuant.

Semi-vowels

So far as English semi-vowel /j/ is concerned, it has a counterpart in Bengali e.g. Bengali /j/. The only difference is in distribution. While English /j/ occurs in word initial and word-medial positions, Bengali /j/ occurs only in word-medial positions e.g. /mojur/, /kaja/ etc. Hence native speakers of Bengali often fail to pronounce it properly in word-initial positions e.g. in the word 'yellow' /jelə u/.

There is no sound in Bengali like English semi-vowel /w/. That is why the native speakers of Bengali fail miserably to produce English /w/. They sometimes try to substitute English /w/ with Bengali bilabial plosive /b/, the result of which becomes disastrous as the sound is changed beyond recognition. This sound of English can never be transferred from Bengali as even its near equivalent is not there in it. So this is the sound which must be learnt, however painstaking that learning process may be. Otherwise this sound will be absolutely unintelligible to the listeners. Sometimes Bengali vowel /o/ is substituted for English /w/ but it remains a far cry. It can never make up for the English sound and being a vowel, it cannot occur in environments where only a consonant can fit, so in the pronunciation of native Bengali speakers this English sound often lose its character as a semi-vowel.

Observations

- (a) In their attempt to speak English, the native speakers of Bengali generally make the following equations between the English consonants on the one hand, and those of Bengali

on the other. In the process of speaking English, they generally transfer that consonant phoneme from Bengali which they consider to be equivalent to a particular consonant phoneme of English.

English Consonants	Bengali Consonants	English consonants	Bengali Consonants
/p/	/p/	/f/	/f/
/b/	/b/	/z/	/J/
/t/	/t/	/h/	/h/
/d/	/d/	/tʃ/	/c/
/k/	/k/	/dʒ/	/J/
/g/	/g/	/m/	/m/
/f/	/ph/	/n/	/n/
/v/	/bh/	/ŋ/	/ŋ/
/θ/	/tʰ/	/l/	/l/
/ð/	/dʰ/	/r/	/r/
/s/	/s/	/w/	/o/
/z/	/J/	/j/	/j/

- (b) The native speakers of Bengali do not aspirate English voiceless plosives in stressed initial positions lest the meaning of such a phoneme gets changed, for it so happens in their month-tongue. They must be assured in unequivocal terms that in English the meaning of the word in which such a sound occur shall not be changed for producing that sound as an aspirated one.
- (c) Bengali retroflex /t,d/ are alveolar sounds; so their place of articulation is the same as those of English /t,d/. The learners must be told only not to curl back the tip of their tongue while producing English /t,d/.

- (d) The learners are to be taught to use the end of the front upper teeth and the lower lip instead of both the lips while producing English fricatives /f,v/. In that case the place of articulation as well as manner of articulation of these sounds will be almost the same as those of English /f,v/.
- (e) They are to be taught to protrude the tip of their tongue between the ends of their upper and lower frontal teeth while producing English fricatives /θ,ð/. In that case, the Bengali /t̪h,d̪/, they generally transfer for these sounds, will be similar to English /θ,ð/.
- (f) There are no problems with English /s,f/ for Bangali /s,f/ are exactly similar to them. But the Bangladeshi learners must be taught English fricatives /z,ʒ/, for these sounds are not there in Bengali phonology. If mimicry does not work, they must be told at which point of the oral tract the constriction is to be made for producing these sounds.
- (g) English fricative /h/ and Bengali fricative /h/ are the same, but while the most frequent allophone of English /h/ is voiceless, that of Bengali /h/ is voiced, so the native speakers of Bengali tend to produce every English /h/ as voiced. This habit must be rectified by continuous practice.
- (h) The learners should be asked to strengthen the element of affrication while producing English affricates /tʃ,dʒ/, for in that case only, the Bengali affricated plosives /c,ɟ/, which are substituted for the English affricates, will be similar to them.
- (i) English nasals /m,n/ and Bengali nasals /m,n/ are quite the same, but there are some problems at the level of allophones which must be attended to and habits of the native speakers of Bengali should be rectified where necessary. The teacher should assure that his learners do not produce velar nasal /ŋ/ in combination with a following /g/ in intervocalic positions.

- (j) Bengali lateral /l/ and English lateral /l/ are the same but there is a problem at the allophonic level i.e. in producing dark [ɫ]. It should be explained to the learners how to produce dark [ɫ] and in which environments it is to be used.
- (k) Bengali /r/ is an alveolar flap or trill whereas English /r/ is a post alveolar fricationless continuant (sometimes a trill as well) though, in our descriptions, the same phonemic symbols have been used for both the sounds. English /r/ occurs only in the initial and medial positions and that also immediately before vowels (the learners should be asked to follow this rule instead of pronouncing /r/ in English words according to spelling). English /r/ occurs in the final position very rarely-only when the word-ending in 'r' or 're' is immediately followed by another word-beginning with a vowel. But since in Bengali /r/ occurs in all positions and since the Bangladeshis generally follow spelling pronunciation in English, they pronounce /r/ in all positions if the latter in there the spelling of the word. This habit must be checked and they must be made aware of the rules of pronouncing /r/ in English. They should also be advised to use the trill-allophone (which occurs only initially in Bengali) of Bengali /r/ and not the flap one when they try to produce English /r/. For in that case, their realization of the sound would be nearest to English /r/.
- (l) Bengali vowel /o/ can never be the equivalent of English semi-vowel /w/. The learners should be made aware of this fact, otherwise their realization of this sound would be grossly mutilated and hence will become unintelligible to the native speakers of English. This sound should be taught to them carefully with a lot of practice since they are not familiar with it as this sound is not there in Bengali.

Consonant Clusters

In no language can every consonant cluster with every other consonant. There are always some constraints regarding consonant clusters. The following constraints are there in English :

- (a) In the initial position /tʃ/, /dʒ/ /ð/ or /z/ do not combine with any other consonant;
- (b) /r/, /w/ or /j/ can occur in clusters only as the final elements;
- (c) in the word-final position, consonant clusters such as /pf/, /td/, /lzd/, /ʒbd/ are not possible;
- (d) /l/, /r/ or /w/ cannot occur as the initial element of an initial cluster;
- (e) upto three consonants can begin a syllable and up to four consonants can end a syllable; and so on.

Bengali consonant clusters have got the following constraints :

- (a) minimum two consonants form a cluster, and the maximum number of consonants forming a cluster is three;
- (b) Bengali consonant clusters always occur syllable initially even when they are word-medial;
- (c) word medially a cluster cannot occur after an open syllable;
- (d) consonant clusters in word-final position are not found in Bengali and so on.

Since Bengali permits word-initial consonant clusters, there is generally no problem on the part of native Bengali-speakers to pronounce a word-initial cluster, be it biconsonantal or triconsonantal. But since Bengali does not permit clusters of say /tʃ/ and /r/, they find English words like 'three', 'through' 'thrash' etc. in which cluster of English /θ/ and /r/ occurs, a bit difficult to pronounce. Since Bengali does not permit a cluster of /t/ and /r/, they find it a bit difficult to pronounce English words like 'train', 'truth', 'trust' in which cluster of English /t/, /r/ occurs. Initial /fr/, cluster in Bengali is very rare; that is why Bangladeshis find it difficult to pronounce English words like 'shrewd' /fru:d/ 'shriek' /fri:k/, 'shrimp' /frimp/, 'shrine' /frain/ etc. But the consonant clusters that pose greatest problem

to them are the word-final /fn/ and /ɜn/ or in other words, the pronunciation of word-final syllabic /n/. That is why they often fail to pronounce English words which end in '-tion' or '-ssion' or '-sion' e.g. 'translation', 'nation', 'promotion', 'digression', 'television' etc. In their pronunciation these words end either in /-fon/, /-ɜon/ or in /-fan/, /-ɜan/; thus 'nation' /neɪfn/ turns into /nefɔn/ or /nefan/ and 'vision' /vɪzn/ turns into /bhɪfɔn/ or /bhɪfan/ and so on. Again as Bengali does not permit a cluster of /d/ and /r/, the English words like 'dread', 'drown' etc. in which English /d/ and /r/ cluster appear to them to be difficult to pronounce. Bengali does not permit some other clusters also like /gl/, /bl/, /fr/ etc. But they in English words generally pose no problem for the native speakers of Bengali. English abounds in word-final consonant clusters. But since Bengali does hardly permit any word-final consonant clusters, the native speakers of Bengali find it very difficult to pronounce some of those English words in which word-final consonant clusters occur; some of the most difficult are the following: twelfth, 'midst', 'lapsed', 'attempts', 'linked', 'grasps' etc. But in spite of the constraints in Bengali, the native speakers of it do not find it difficult to pronounce most of the English consonant clusters.

"Bengali phonology does not allow consonant clusters finally in words. This is in direct contrast with the English system where final clusters as well as syllabic consonants are permitted. In pronouncing English words, however, the final cluster is usually produced correctly. In the case of syllabic consonants,... a short vowel is introduced before what should be a syllabic consonant. The reason may be in the fact that in terms of the Bengali system final clusters follow the same pattern as the initial clusters whereas the syllabic consonants form a different pattern altogether." (Sunanda Datta, CIEFL Bulletin 72-73, pp. 9)

This study has been undertaken with a view to help those teachers of English in Bangladesh who want to teach their

students good pronunciation of English. The contrastive data provided in it is, however, concerned only with the segmental phonemes; we have deliberately excluded those regarding the suprasegmental features, for that would require a larger space to be discussed.

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PROBLEMS AND PROSPECTS OF GLOBALIZATION IN A DEVELOPING ECONOMY LIKE BANGLADESH

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ABSTRACT

Globalization means the integration of each economy with the rest of the world. In the past it led to uneven development in the world and at present it may lead to the same thing if the nation states are not alert and careful about their responsibilities. Though the elimination of inequalities is not possible, minimization of that is quite achievable. For this the nation state should build their infrastructure, develop human resources, enact new laws, adjust economic and other policies. For a country like Bangladesh maintenance of political stability and social peace is very essential for reaping any benefit from the GATT accord. This accord brought new hopes and obstacles for her growth and development. On the one hand, she may loose because her exports will face open competition in the absence of quota system; but on the other hand, she may gain if she can raise her efficiency in the export sector during the grace period of ten years. She may also gain to some extent because of the rise of the prices of her agricultural exports. But the gains may be eaten up by the rising costs of the service sector, which may be dominated by the multinational companies; and by paying of rents for intellectual property rights. The prospects of losses or gains actually depend on the strength of her economic, social, political and diplomatic factors and policies.

Introduction

Globalization may be defined as an expansion of trade, finance, investment and other economic activities across political boundaries of nation states. It means liberalization of all trade, investment and financial rules and integration of each economy with the rest of the world. It raises economic interdependence

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between nations. In the words of Professor D. Nayyar, "It is associated not only with an increasing cross-border movement of goods, services, capital, technology, information and people, but also with an organisation of economic activities which straddles national boundaries. The process is driven by the lure of profit and the threat of competition in the market".

Globalization is not a new phenomenon. By the late nineteenth century globalization of trade, finance, and services was enforced by the industrialized nations and imperialist powers. The process was largely disturbed by the outbreak of the First World War. It again got momentum after the end of the Second World War, specially from 1950s. But the globalization did not help the development of third world countries during late nineteenth century and early twentieth century.

During the second half of the twentieth century there has been a tremendous increase in world trade. The relative share of global exports in global GDP increased from nearly 6 per cent in 1950 to 12 per cent in 1973, and 16 per cent in 1992. The global exports rose from \$61 billion in 1950 to \$315 billion in 1970, and to \$3447 billion in 1990 (Nayyar, 1995:03). With the continuous upward movement of international trade and related problems, the industrialized nations felt the need for establishing a world body for dealing with trade related issues. As a result, the General Agreement on Tariffs and Trade (GATT) was established by 23 nations in 1947. The main objectives of this article are to provide the readers with a brief background and account of the GATT accord and its possible impacts on a developing economy like Bangladesh. It also suggests some remedial measures for avoiding problems.

General Agreement on Tariff and Trade (GATT)

Practically, GATT appeared as a common forum for the negotiation of reductions in tariff barriers on a multilateral basis.

It wanted to create equal, nondiscriminatory treatment for all member nations, reduce tariffs by multilateral negotiations, and to eliminate import quotas. By mid 1994, the number of member nations rose to 125.

For a long time, GATT played a dominant role in the field of international trade and commerce. According to the principle of GATT, each nation has the right to reduce its trade restrictions in return for such reductions by other countries. It permits one nation to retaliate against another nation's goods in the case in which that nation has unfairly restricted trade. These principles were enforced among the member nations during eight rounds of talks under the sponsorship of GATT. Among those the 'Uruguay Round' was famous and remarkable for signing many important agreements. It ended with the establishment of World Trade Organization (WTO) in Marrakesh in Morocco in April, 1994. This world body came effective from 1 January, 1995, and is responsible to implement the agreements signed under GATT.

The Uruguay Round produced, in 550 pages, the draft final act in 1991; and it led to the signing of final act on 15 December, 1993. The act contains 28 agreements and appended to by some 26,000 pages of national tariffs and service schedules.

Some Important Agreements Under GATT

Besides the establishment of WTO, the Uruguay Round created 28 multilateral and 4 plurilateral agreements. Of them the following 6 are very important. These are: trade related investment measures (TRIMS), trade related intellectual property rights (TRIPS), general agreement on trade services (GATS), agreement on agriculture, agreement on government procurement and state trading; and agreement on textiles and clothing.

TRIMS ensure that a country will not discriminate between foreign capital and domestic capital; it will allow foreign investors to buy any quantity of raw materials from abroad; it will

allow foreign companies to export their products and to remit the entire amount of profit after tax; it will permit the operation of foreign companies which may be 100 per cent owned by them. The developed, developing and least developed countries will implement these within 2, 5 and 7 years respectively.

TRIPS will protect patent rights for 20 years; copyrights for 20 years but the rights of computer software and recorded broadcasts for 50 years; trade marks for 7 years (renewable); industrial designs for 10 years (extendable); and it will protect trade secrets against misappropriation and unauthorized use of such secrets.

GATS allow unrestricted foreign investment, in any member country, in banking, insurance, telecommunication, tourism transportation, hotel, restaurant, cinema, television, computer, business services, etc. It compels a member country not to discriminate between the service suppliers of one country and the other. GATS cover about one fourth of world trade in the service sector which alone produces about half of the national income of developed nations of the world.

Agreement on agriculture includes tariffication; tariff reduction and market access opportunities. The agreement on textiles and clothing puts bindings on member nations to remove quota restrictions on garments in phases by 2004. Agreement on government procurement and state trading allows a government to procure goods and services from home or abroad but restricts to procure those above a specified limit without open international tender, in the case of which, native and foreign suppliers will be treated equally.

Possible Effects in a Developing Economy Like Bangladesh

It is estimated by GATT economists that the gains of above agreements will be an increase of world income by US\$235 billion annually while the rise in world exports will be \$755 billion annually, by the year 2002. It ushers in a new era of

economic cooperation, through multilateral trading systems, for the benefit and welfare of world population. The Marrakesh Declaration of 1994 expected that the above agreements would "strengthen the world economy, lead to more trade, investment, employment and income growth throughout the world." To what extent a developing country like Bangladesh can reap the actual gains of the above, depends largely on the strength of her internal economic factors, capacity to manage its macro economic conditions, and its diplomatic relations with other nations.

The Problems

1. The largest export earning (over 60%) sector of Bangladesh economy is readymade garments. After the total withdrawal of quota system by USA, Canada, EC, etc., this leading sector may face serious problems. The main reason is that it will have to face tough international competition. This sector has not yet been able to make it too efficient to face such a world wide competition. The benefits of cheap labour may largely be reduced by low productivity of labour in this sector. For example, a study shows that the productivity of a labourer of this sector in Sri Lanka is almost double of the same in Bangladesh.

Moreover, according to an estimate domestic textile industry can currently meet only 4 per cent of the woven fabrics required for making garments, and 41 per cent of the knit garments exports. Considering the existing and future growth prospects, it is estimated that the supply of woven fabrics may grow up to 12 per cent and that of knit fabrics may rise to 77 per cent of the total requirements by 2005. This situation offers a gloomy prospect for the country's exports (Knan, 1996).

2. According to the GATT accord the subsidy in the agriculture sector should be withdrawn in phases. This will increase the price of agricultural inputs and ultimately that of outputs in the domestic market. Similarly, the withdrawal of

agri-subsidy will raise the prices of agri-products worldwide. Since Bangladesh imports more agri-products than what she exports, she would be a net loser in the game. The following table exhibits this evidence.

Table-1. Major Agricultural Imports and Exports of Bangladesh

(Amount in million US\$)

A. Imports

Year	ITEMS				
	Rice	Wheat	Oil seed	Cotton	Total
1988/89	17	357	11	93	478
1989/90	102	241	14	105	462
1990/91	4	327	1	93	425
1991/92	4	251	30	95	380
1992/93	-	176	35	91	302

B. Exports

Year	ITEMS				Total
	Jute	Tea	Frozen food	Other agri-products	
1988/89	97	40	141	13	291
1989/90	125	39	138	11	313
1990/91	104	43	142	8	297
1991/92	85	32	131	10	258
1992/93	74	41	165	15	295

Source: Ministry of Commerce, Government of Bangladesh, and Khan, 1996.

Moreover, as per the GATT accord, Bangladesh is required to open at least 3.3 per cent of its market of domestic agricultural consumption for imports from abroad. This will just increase the burden of the country further.

3. Under the umbrella of GATT, all multinational service industries, like banking, insurance, telecommunication, tourism transportation, hotel, television, computer and other business services have open access to Bangladesh economy. They will have to be treated as domestic ones. With higher technology and efficiency, they will certainly dominate the domestic market; and they will drive out inefficient and backward local industries of this sector. It will go against the growth and promotion of existing local industries of this sector.

4. TRIPS will largely benefit the multinational companies and the business organizations of developed countries which possess the capacity of innovations and discovery. On the contrary, it will impose continuous taxes on the importers of a developing economy like Bangladesh. On the one hand, it will guarantee the income flows of the multinational companies; but on the other hand, it will create balance of payment problems for a country like Bangladesh. It is argued that TRIPS will reinforce dependence on technology from the North at higher price, and will be instrumental to transfer rent away from Bangladesh.

5. The GATT accord proposes equal rules of competition for every nation of the world which is already inequally divided into different regions and countries. In such a game operating between weak nations and strong nations, the winners will surely be the strong ones. So, a country like Bangladesh may not gain much in the long run from such an accord.

Prospects and the Challenges

In order of total population, Bangladesh is the 9th largest country of the world and obviously a prospective part of world market. The exports of Bangladesh in world market have been increasing over the years. Her imports also show an increasing trend. All these indicate that she is an active player in the game of world trade. The following table displays that the share of Bangladesh in world exports increases during the last few years:

Table-2. Share of Bangladesh in World Exports (in %)

Year	Share of Bangladesh in World Exports	Index
1990	0.049	100
1991	0.048	98
1992	0.056	114
1993	0.061	125

Source: Export Promotion Bureau of Bangladesh.

The average annual growth of exports of goods of Bangladesh was 8.8 per cent during the period 1981-93 as against the same of 7.5 per cent in South Asia in the same period. The values of merchandise exports of Bangladesh stood at US\$2098 million in 1992, \$2272 million in 1993, and \$2661 million in 1994. The values of her merchandise imports were US\$3252 million in 1991, \$3888 million in 1992 and \$4001 in 1993 (WB, 1995).

With a view to pay more dynamic and active role in world trade Bangladesh has to do a lot of things within the shortest possible time. Even the undertaking of some new measures on priority basis is essential for her survival. Some of these are discussed below.

1. To overcome the problems of readymade garments sector, Bangladesh should immediately take measures for raising the labour productivity. This can be done by proper training, skill-development, and by managing the things efficiently. This sector should also maintain cost-effectiveness to face increasing world competition.

After the withdrawal of quota system, the garment sector may have new openings beyond the year 2005. If this sector can survive in the open competition in world market, it has enormous prospects in future. This has posed a formidable challenge for Bangladesh.

Some areas of Bangladesh have already been selected for production of high quality cotton (American variety). Both the public and private sector should work together to explore the possibility of raising the yield and the production of cotton output in Bangladesh in near future.

Besides, Bangladesh can face the new challenge by modernization and diversification of garments sector, and by attaining a high level of cost-efficiency in this sector. She should also increase and diversify her export base.

This sector has attained phenomenal growth during the last 15 years. It started with only 21 units and an export earning of US\$3.5 million in 1981 and jumped to over 2000 units generating a gross export earning of over US\$2000 million in 1994-95. Even in the year 1989-90, the share of this sector in total exports was only 41 per cent but in 1994-95 financial year its contribution to total exports was about 63 per cent.

So, this sector has enormous growth prospects beyond the year 2005. Bangladesh should prepare herself in all respects to meet the challenge and to avail the opportunities. *

2. Bangladesh has been blessed with fertile land and monsoon. She can easily increase her agricultural production by increasing cropping intensity, and the uses of credit and irrigation facilities, fertilizer, HYV seeds, etc. By raising agricultural production, Bangladesh can feed her population and export those in foreign countries instead of importing those from abroad. This will also improve the position of her balance of payment.

According to GATT accord all the farm subsidy has to be reduced substantially during the six years transition period beginning from 1995. This will raise the prices of farm output. Moreover, markets in the West and in the East will no more be protected for farm products. Instead, the market will be open for all. Bangladesh can avail the opportunities of this changed

situation. She is a net exporter of agricultural products like jute, jute goods, tea; leather and leather-goods, shrimp, etc. The prices of these goods may rise in the international market. In that case, Bangladesh may gain from the GATT accord.

3. Though it is widely believed that in the service sector the entrance of multinational companies may drive out the local companies, the actual happenings may not have conformity with these beliefs. Since the GATT accord offers reasonable time for rectifications, the local service industries have the opportunities for raising their service standard and for removing the inefficiencies. Besides, the joint venture operations may also help to raise the levels of efficiency of local service industries.

Another good side is that the multinational companies will transfer higher technology and scarce capital to Bangladesh; and create employment opportunities for her labour force. Moreover, qualified professionals and experts in different fields may avail the opportunities of securing assignments in the developed and developing countries under GATT's natural persons' movement clause.

4. Though, the intellectual property (IP) rights will largely benefit the developed countries and multinational companies, it opens rays of hopes for a developing country like Bangladesh also. There are some indigenous technologies and products, in the industrial and agricultural sectors, which have not yet been registered and obtained patent rights. The innovators of new technology and new products are allowed 10 year's grace period for availing patent rights. Bangladesh should use this opportunity properly.

5. It is hoped with very high expectations that the implementation of GATT accord by Bangladesh Government, will attract direct foreign investments in the country. The multinational companies want secure place and laws for their investments. The GATT accord provides legal security for them. If

other conditions remain favourable, they will not hesitate to invest in Bangladesh.

So, the above measures will have a positive impact on our trade and investments. The Board of Investment (BOI), established in 1989 under the chairmanship of the Prime Minister, registered during 1991-95, 2586 industrial units, of which 279 were foreign involving investment of about US\$26 billion, specially from Japan, Malaysia, Hong Kong, China, South Korea, Germany, Canada, Switzerland, The Netherlands, Sweden and India (Mohiuddin, 1996).

Conclusions

It is argued that in the recent years, most of the gains from the international economic integration accrued to the developed countries which exported capital and imported commodities (Nayyar, 1995). The Process of globalization was uneven in the past. It is also uneven at present. Referring to its asymmetrical characteristics Professor D. Nayyar observes:

National boundaries should not matter for trade flows and capital flows but should be clearly demarcated for technology flows and labour flows. It follows that the developing countries would provide access to their markets without a corresponding access to technology and would accept capital mobility without a corresponding provision for labour.

Accepting the above realities he further argues that, "Globalisation has reduced the autonomy of the nation state in matters economic if not political, but there remain some degrees of freedom which must be exploited in the pursuit of industrialisation and development." For this two factors are crucial: investing in the development of human resources and creation of physical infrastructure.

With the implementation of GATT accord, the world becomes closer. It experiences enormously increasing movements and flows of goods, services, capital, technology and information across the continents, regions and countries. To what extent

Bangladesh can gain from this increased flows of trade and capital, depends on how expeditiously and efficiently she reacts to the rules of the GATT accord, and tries her best to reap the benefits out of that. She should develop her human resources and infrastructure as quickly as possible. She should make new laws and adjust her economic and other policies. Both the public and private sectors should come forward for undertaking the above responsibilities. But the government has to play a very dynamic, active and decisive role in this regard. Above all, political stability and social peace are the most essential preconditions for achieving any success whatsoever. If these conditions are satisfied, it is expected that GATT accord might help Bangladesh in her struggle for attaining the path of self-sustained growth.

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DEVELOPMENT FROM BELOW ? THEORY AND PRACTICE OF DECENTRALISATION IN BANGLADESH

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1. INTRODUCTION

In the post-war period 'development' has become by far the most popular and at the same time widely discussed phenomenon in the political, economic and administrative arenas of developing countries. The governments of these countries irrespective of their political ideology, express their commitment to development with a view to alleviate mass poverty and improve the living standards of their population, especially those in rural areas. During the 1950s and 1960s many of these countries adopted centralized planning and administrative systems, but in most cases they failed to make noticeable inroads with regard to rural poverty alleviation. The disappointing results of the centralized approach to development paved the way for a resurgence of interest in decentralising government systems and the planning and management of development in the 1970s. 'Decentralisation' has, since then become a persistent theme in the political and administrative discourse, a fashionable term for those concerned with development. The arguments for decentralisation have become so persuasive and apparently convincing that during the last two decades most countries have adopted decentralisation as a model of 'development from below'. But the theorists seem to be divided in their opinions about the possible contribution that decentralisation can make in the Third World. This paper seeks to assess the 1982 decentralisation programme of Bangladesh in the light of the existing theories on the subject. But before we enter into the details, a review of the theoretical perspectives on decentralisation is in order.

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2. DECENTRALISATION : THEORETICAL PERSPECTIVES

The intellectual discussions on decentralisation over the years have given rise to a number of theoretical perspectives. For analytical convenience, we divide them into two broad categories: normative theories (based on 'ideal type models') and descriptive theories (based on what is happening in practice).

(a) Normative Theories

A number of prominent scholars conceptualise decentralisation from a broad liberal tradition. They advocate decentralisation policies that highlight local government as the institutional vehicle for political education, training in leadership, political stability, responsiveness and more effective public accountability. This approach is commonly known as 'democratic decentralisation' (Smith, 1985), Laski (1931), and Wilson (1948). Much of these writings on local government, and particularly the earlier ones, emphasize a theory which is essentially political with its implicit contention that local government is beneficial for the political health of a nation. Implicitly, these writers assume that the economic health of a nation is dependent on its political situation.

From this classical liberal democratic notion of local government has emerged a more recent school of thought in the writings of Maddick, Cheema and Rondinelli, Mawhood, Conyers, Nellis, Uphoff and Esman, Bryant and White, Montgomery and agencies such as the United Nations. However, in contrast to the classical political theory, this recent school is more developmentally oriented and highlights the importance of decentralisation for social, economic and political change in the Third World. The main arguments of this approach can be summarised as follows:

First, decentralisation is regarded as a necessary condition for improving the planning and implementation of development. It is argued that decentralisation allows government officials to obtain better quality information about local needs and

priorities thus permitting plans to be 'tailor-made' for specific areas using detailed and up-to-date information on local conditions.

Second, it serves as a mechanism to promote local participation in the planning and implementation of development projects. It encourages people to maximize their own commitment and contribution towards the successful implementation of development projects and also towards making development enduring (United Nations, 1962; Rondinelli, 1981).

Third, It is argued that decentralised local institutions through their knowledge of local resource availability and the terms on which these can be secured are in a position to mobilise them for local development efforts (Uphoff and Esman, 1974).

Fourth, decentralisation leads to greater government accountability and makes the government more responsive to the people at grass-roots levels. In decentralised systems local people have better access to representatives and officials and can demand that they explain what they are doing. Maddick maintains: '..... the local government official working at local levels is more vividly aware of his political accountability than the central government servant, whose responsibility is more remote, the local government has his master at his door-step' (Maddick, 1963: 58).

Fifth, by giving power and authority to local bodies, decentralisation helps to minimize misunderstanding and possible disagreements on different issues and provides a base for coordinating and integrating development activities undertaken by diverse government organisations.

Sixth, it is maintained that decentralisation can contribute to equity by improving the position of the poor. It helps the poor to get involved in politics and that political involvement strengthens their material position (United Nations, 1979). It helps develop confidence and competence among the poor to 'pull

down' benefits from locally managed development projects, which would otherwise be siphoned off by local elites.

Seventh, by allowing better representation of all social groups to articulate their needs, decentralisation contributes to greater equity in the allocation of government resources among them (Rondinelli, 1983; Esman and Montgomery, 1982) and reduces the likelihood of social tensions developing. Thus it helps to 'maintain political stability and national unity' (Maddick, 1963; Rondinelli, 1981). By virtue of decentralisation people learn the rudiments of democratic political activity at the local level. They learn to choose between policy options and prospective leaders. They gain experience in holding those in office accountable. Such an education ultimately enriches central government as better trained politicians emerge from the grass-roots (Maddick, 1963; Bonney, 1982). It is important to mention here that although such benefits do not accrue immediately at the local level, they are seen as making a major contribution towards the creation of a national environment that makes local progress more likely.

While political scientists and public administrationists created a detailed case for decentralisation, economists came forward with their own arguments. The extensive literature on the economics of 'public choice' has paid considerable attention to decentralisation and come to regard it as an important mechanism for effective service provision. Grounded on the belief that 'an individual will locate himself where local public goods provided coincide with his own preferences' (Tiebout, 1956), the public choice theory contends that decentralised government is better able to reflect the needs and preferences of a particular individual or community. It further argues that concentration of services creates numerous problems and reduces consumer satisfaction. Decentralisation helps to overcome many of these problems and contributes towards efficient and responsive delivery of goods and services.

In management the theorists, idealists and practitioners all favour decentralisation for better managerial performance.

Handy (1985) observes that managers within decentralised organisations are more committed as they have more command. He argues that greater job satisfaction leads to enhanced motivation and productivity. He, however, warns that this is too simplistic and points to the counter-arguments e.g. role-oriented individuals in entrepreneurial jobs, loss of control and increased costs with decreases in scale. While Handy's points are important, of much more managerial relevance are the recent American writings, especially those by Moris (1981, 1991) and Leonard (1982) who avoided any generalisation of the benefits of decentralisation and instead, advocated for a contingency approach with an argument that different contexts will require different forms.

Thus normative theorists of decentralisation have justified their positions on political, administrative, economic and managerial grounds. However, a number of weaknesses in their arguments must be noted. The liberal and developmentalists consider the value of decentralisation from a normative perspective and consequently fail to recognize the importance of the context within which decentralisation takes place. Presently there is a growing realisation that different forms of decentralisation will produce different results. Even when similar institutional arrangements for decentralisation are introduced, they can serve different goals and yield very different results. Also, they have looked at 'power' from an extremely narrow perspective and failed to perceive the distribution of power beyond the conventional voting right. The public choice school suffers from both theoretical and practical problems. It assumes, for instance, that individuals have equal access to information, there would be no monopoly power, and no public goods, which is hardly the case in real world. It is also contested over the issue of externalities (benefits and cost spillovers) between areas. While the management theory offers much more than the relatively simplistic liberal democratic and public choice literature, Moris and Leonard have not resolved major

problems of 'decentralisation' being the result of complex social and political process. They have developed the notion of an organisational analyst who can step back and analyze options. This may be possible on some aid financed projects, in reality, however, in most circumstances such analysts are at best a lone actor in a set of social, political and institutional interactions. This leads us to more descriptive theoretical approaches.

(b) Descriptive Theories

In recent years the normative values of decentralisation have been strongly contested by a number of scholars who see prescriptive theories as rhetorical and full of disguised ideological overtones. The writings of Fesler (1965), Samoff (1979, 1990), Hyden (1993), Smith (1985), Rakodi (1988), Slater (1989, 1990) and others have resulted in a new approach to the study of decentralisation which owes its conceptual roots in the works of famous political economists like Marx and Gramsci. Contrary to the liberal and developmentalist case that decentralisation has inherent qualities to promote development in the Third World, these scholars argue that in the developing countries decentralisation has rarely facilitated development. Heaphey (1971) goes as far as to argue that decentralisation is 'an obstacle to development'.

These critics view decentralisation policies as potentially parochial, inequalitarian and consistent with the privileges and exploitation built into local and national power structures (Fesler, 1965; Smith, 1985). They are of the opinion that decentralisation serves as a facade to maintain or strengthen, in one way or another, the position of those who hold power. They observe that despite all rhetoric decentralisation programmes introduced during the 1970s and 1980s in Zambia, Tanzania, Uganda, Kenya, Nigeria and Ghana all were intended to serve the unspecified goals of the regimes in power (see Chikulo, 1981, Slater, 1989; Barkan and Chege, 1989; Hyden, 1983; Asibuo, 1992).

Pointing towards the political economy of developing countries, theorists argue that decentralisation can hardly promote the welfare of the poor. They argue that if power remains concentrated in the hands of a narrow elite group, as is the case in many developing countries, decentralisation is likely to empower these elites rather than the common people. In such situations decentralised local institutions will be captured by local elites for the continuation of their dominance in various spheres (Fesler, 1965; Smith, 1985; Slater, 1989; Hyden, 1983). Kasfir (1983), Hyden (1983) and Samoff (1990) have shown that despite all rhetoric and progressive propaganda, decentralisation efforts in Africa have actually allowed influential local groups to capture most of the benefits. This was exactly what Caiden and Wildavsky (1974) have warned of. They note that decentralisation makes projects more vulnerable to pressures of local elites and when responsibility is dispersed these elites benefit.

Given this situation, the popular justification for decentralisation that it promotes grass-roots participation, has faced scrutiny. Today it is maintained that decentralisation in itself is no guarantee that power is actually transferred to the people, nor does it necessarily mean increased people's participation (Fortmann, 1980; Smith, 1985). Rather it may mean that control has shifted from a national centre to a regional centre, which in its turn, spawns new bureaucratic elites that could guard more jealously their vested interests than their central predecessors (Mullen, 1985: 30). Keith Griffin (1981) notes that power at local level is more concentrated, more elitist and applied more ruthlessly against the poor than at the centre. So, greater decentralisation, in his view, does not imply greater democracy let alone 'power to the people'.

It is argued that the propositions of public choice theory are hardly valid in developing countries where 'proliferation of administrative arrangements at local level can bring about deterioration in the quality of administration as number of officials with less education, narrower outlooks and hardly any

experience are employed' (Mukerji, 1961). Most of decentralisation efforts, to their view, have failed to improve local service delivery system or the general standard of living in rural areas because of technical weaknesses. Where it is effective, it is likely to reinforce existing power relationship and unlikely to benefit the disadvantaged groups (Samoff, 1990).

Finally, contrary to the developmentalist argument that decentralisation leads to equitable development, radical critics view it as 'a means for capitalist accumulation' (Smith, 1988; Rakodi, 1988; Slater, 1989). To them decentralised government is not only elitist and inegalitarian, but also it performs a vital role in reproducing some of the conditions required for capitalist accumulation. Rakodi (1988) shows how the system of decentralisation in Zambia has been used as a means for facilitating private accumulation, patronage distribution and social control. She observes that the local councillors are elected from the petty bourgeois class who tend to improve their access to resources at the local level to improve their own level of consumption, to accumulate capital on business and to provide rewards to their supporters.

It is clear from the foregoing discussions that while in the normative approach decentralisation has been transformed into an 'absolute good' (Fesler, 1965), the descriptive approach dismisses any such value by arguing that it is 'not an absolute good in its own right' (Smith, 1985: 191). Those contributing to the later approach emphasize the fact that decentralisation is a political process that involves interactions of various socio-economic and political actors. Therefore, it should be seen as a part of the process by which dominant classes including those at the local level articulate their interests through state policies and institutions (Smith, 1985: 25-26). It should be noted that while the importance of the political economy approach is well recognized, it is not beyond limitations. The greatest limitation of this approach is that it is basically explanatory rather than prescriptive in nature. It has presented a 'discourse' pointing out

the fundamental problems of the normative approach, but fails to provide any specific alternative for the accelerated development in the Third World.

Having reviewed the various theoretical perspectives on decentralisation in the next section we examine and analyse the upazila decentralisation programme of Bangladesh. The points identified in this section, especially the contradictory propositions of liberal and developmentalists and their critics, are however, returned to in section four to see what light a study of Bangladesh can throw on their validity.

3. The Upazila Approach to Decentralisation in Bangladesh (1982-1990)

The 1982 upazila decentralisation programme introduced by the then martial government of General Ershad clearly represented a step forward in reforming rural local government system of the country. Under the programme, 460 existing thanas were elevated to upazilas giving them a democratic character and considerably enhanced power and authority. The responsibility for a large number of development activities including agriculture and extension services, rural industrialisation, health and family planning activities were transferred to the new democratic institution, the Upazila Parishad (UZP). Headed by a popularly elected Upazila Chairman (UZC) the UZP had a combination of representative and official members. While the representative members enjoyed the voting power in the UZP, the official members were divested of the voting right they used to enjoy in the previous system. The preeminence of the government officials was further undermined by bringing them under local political control, which marked a fundamental shift from the past. The above transfer was backed by the devolution of financial authority and staff support from the central government. The UZP was also empowered to plan and implement development schemes without seeking approval from higher authorities.

The whole reorganisation programme was initiated and implemented by the regime with the stated goals of bringing administration closer to the people and ensuring their participation in the development process. The existing administrative system was considered not only remote, inefficient and non-representative, but also incapable to undertake major development activities. The upazila decentralisation was an attempt to obviate such limitations and thereby to make local government dynamic in the process of rural transformation. Explicitly it had a number of values. By strengthening local bodies and making them representative institutions, it provided opportunities for popular participation; by posting senior administrative and technical staff at the upazila level, it attempted to improve administration and technical capacity; by putting resources at the disposal of the UZP, it enabled the local body to plan and implement projects of local importance. To a very high degree the upazila system was presented to the Bangladeshi public, bureaucrats, politicians and donors as the main device through which the problems facing rural populace, would be tackled and overcome.²

The present paper assesses the performance of the upazila decentralisation in the light of such objectives. It draws on the findings of the research carried out in two upazilas chosen from two different spatial locations of the country. These two upazilas were Bhaimara and Rajapur.³ Data were collected over a period of six months during 1991-1992 by using a variety of techniques including questionnaires, informal discussions, document surveys, interviews with key informants and participant observation. In an attempt to test case study materials and determine their relevance in other areas of the country, the findings of case studies have also been triangulated against secondary information available on other specific localities and on the national level.

The Upazila Decentralisation: Results Achieved

As already mentioned, the upazila decentralisation had a number of explicit objectives. But here our purpose is rather modest in that we seek to assess its performance in three main areas namely enhancement of popular participation, mobilisation of resources and effectiveness in service delivery. The evidence collected from the field shows that there is a large gap between the stated objectives and the real achievements of the upazila system in various spheres.

Although upazila level development projects were expected to 'bubble-up' from the grass roots with inputs from the beneficiaries, it did not happen. Project planning and decision making continued to be done by dominant elites and government officials. Participation of the rural poor has remained virtually limited to the implementation phase of projects mainly as hired labourers. This is exactly what they used to do in the pre-upazila days. The other mechanisms of participation were equally ineffective. Projective committees have largely remained ineffective. An examination of committees formed at the upazila and union levels showed that committee membership was clearly biased in favour of those belonging or having access to power structure. Since local representatives view these projects as an opportunity to build a future for themselves, their friends and cronies, members chosen for such committees happened to be those representing the same clan, faction or socio-economic interests. Even the electoral processes were found to be less effective than was anticipated. Between 1982 and 1991 two nationwide upazila elections were held, one in 1985 and the other in 1990. Although most of the respondents reported voting in the 1990 elections, a sizeable number of them representing poorer households could not overcome the influence of local power-holders in the elections. Although landless labourers and poor peasants have the same constitutional right as the large landowners, excessive dependence of the former upon the latter rendered them highly susceptible to be influenced in their

decisions and actions. It was found that the excessive reliance of the poor on the rich acted as a major force influencing the choice of a proportion of poorer voters as the dominant elites used threats of economic sanctions in order to have their preferred candidates accepted by their clients. Alongside these 'subtle' practices, the direct use of violence and physical intimidation at election times have prevented many voters, particularly the women from exercising their democratic rights. What all this indicates is that the upazila system has made little difference in terms of popular participation.

Viewed from the perspective of local resource mobilisation the performance of the upazila decentralisation is far from encouraging. Although the UZPs have been authorised to collect revenues from a number of specific heads, available evidence suggests that they have failed to generate much revenue for developmental purposes. Most micro-level studies (eg. Asaduzzaman, 1985; DANIDA, 1988; Nathan, 1989 and Huque, 1989) show that the mobilisation of revenues from local sources by upazilas has remained extremely poor,⁴ leading to an overwhelming dependence of these bodies on the central government for grants in order to run their routine as well as development administration. The situation in our study upazilas is by no means different. Between 1983/84 and 1990/91 the average locally mobilised revenue in the annual UZP budget in Rajapur was 5.8 percent and that in Bhaimara was 5.5 percent. This means that the government contributed more than 94 percent of the upazilas' yearly budgets. There are a number of factors that explain upazilas' inability to mobilise sufficient resources locally. The revenue base of the UZPs was not broad enough in the first place to enable them to mobilise sufficient resources. Even within its limited revenue base, the most important sources (lease/auction of local hats, bazaars, jalmahals and ferries) did not yield expected revenues because of the mechinations used by leasees. This was also poor since local politicians were reluctant to tax themselves and their electorates

for fear of losing popularity. In addition, the prevailing political and administrative culture (mirrored in the levels of corruption and irregularities) has further undermined the possibility of tapping local resources for developmental purposes. As a result, local contributions to UZP budgets remained extremely limited and the objective of greater self-reliance proved to be an unrealistic aspiration.

In terms of the 'responsiveness' in service provisions the performance of the upazila has fallen far short of expectations. Evidence shows that in contrast, the upazila decentralisation programme increased the opportunities for various forms of patronage and corruption in the design of development operations and the management of service delivery systems. It also shows that the major focus of local representatives is not to improve services, but to seek special favours and pursue corruption and patronage. As a result, upazila level decisions were influenced more by personal and group interests, than the pursuit of developmental objectives and adherence to formal and impersonal rules and regulations.

The point can be explained by citing examples from agriculture, health and poor programmes. Our study reveals that the introduction of the upazila system was associated with a reduction of expenditure in agriculture by the central government, and that UZPs did not attempt to compensate for the decline by allocating the maximum permissible amount for the sector. While the central government allocation for agriculture declined rapidly⁵, the allocation within the sub-sectors of agriculture at the upazila level became highly skewed⁶ in favour of lumpy projects involving construction works. In a country like Bangladesh where land is scarce and the small farmers are the majority, the major thrust of agricultural development should be the upgrading of small farmer production. But as the evidence shows the upazila system has failed to reach these farmers in terms of either extension services or in dispensing inputs (Siddiquee, 1993). The extension service has remained ineffective

while the bulk of the inputs provided through the upazila were siphoned away by larger farmers. The procedural and allocative mechanisms introduced at the upazila level and below are biased in favour of larger farmers and influential families.

Agricultural inputs and services are divisible public goods, which are vulnerable to be monopolised by local elites. If we look at an apparently less divisible good, the health service, the situation does not appear to be radically different. Although initially there was a lot of satisfaction among the local people about the upazila system that helped the creation of the Upazila Health Complex (UHC) and health centres at the union level, the enthusiasm gradually evaporated as these centres came into operation. The bias demonstrated by local councillors towards infrastructural schemes, as already pointed out, meant that the health sector was denied its due share in the UZP budget. The UHCs have failed to develop public confidence in their services. Although most of the respondents in both upazilas reported visits to the UHC in the previous year, only a few of them were satisfied with the services they received. The service delivery capacity of these centres are severely undercut by inadequate supplies, limited equipment and facilities, shortage of medical personnel and paramedics with requisite skills. Though health centres were established at most rural unions, these centres without exception, are faced with acute⁷ problems. This situation discourages people from attending union sub-centres and as such, many patients go directly to the UHCs. The average daily turnout of patients is also very low as only the most desperate cases attend these centres. The poor quality of services provided at these centres explain the present state of under-utilisation of health care facilities in a country where the demand for such services is enormous. However, compared to other sectors, health is relatively accessible to the rural poor and they benefit from the public health care system, particularly in terms of immunisation and ORS packages.

Looking at its role in ensuring 'equity', it appears that the upazila decentralisation has not only failed to widen income opportunities for the poor it has also failed to improve the effectiveness of existing employment and income generating programmes. Our investigation into rural public works programme, the largest among the income generating programmes run by the UZP, reveals that the impact of the programme on the poor though positive, is rather marginal. Elite dominance, official corruption, the weak and vulnerable position of the poor all contributed to direct the most benefits of these programmes away from the poor. These programmes offered nothing more than some employment relief for some poor households in lean agricultural seasons but they were so frequently exploited that they hardly got proper wages. Also the duration of such work was too short to have a major impact on their incomes. Since their dependence on wages are substantial, these simply ended up in meeting the daily consumption needs and did not enable the poor to invest for future. The activities of Bangladesh Rural Development Board (BRDB) cooperatives and other agencies responsible for promoting rural employment and income generating activities at the upazila level were found to be very limited. There is hardly any evidence to show that these organisations were effective, in providing a 'safety-net' for the rural poor by crating opportunities for sustained income.

It is evident from the above that the performance of upazila decentralisation has fallen short of expectations. From this it should not, however, be concluded that the decentralisation programme did not have any positive impacts. Surely, the upazila system has had some beneficial effects; despite its failures already identified, it made some improvements in various spheres. But here our central thesis is that the failure of the upazila far outweighed its achievements. On its positive side, the decentralisation programme had heralded a new era in the history of local level planing. It fostered the planning and execution of a huge number of development projects locally,

though by the privileged minority. Our investigation further reveals that the upazila decentralisation programme also contributed to raise the awareness of the rural populace and increased their interaction with the local government functionaries. Hence, people's participation, if it is viewed in terms of the contacts people made with the elected representatives and government officials at the upazila level, increased since 1982.

But the most remarkable achievement of the upazila system is the infrastructural development that has taken place in rural Bangladesh since 1982. As already pointed out, since the introduction of the decentralisation programme, the infrastructure sector has received a disproportionate share of budgetary allocations at the local. This has helped at the cost of other sectors, the construction of a sizeable number of roads, bridges, culverts, drains, irrigation channels, dams and embankments and the physical infrastructure for social services like schools, health centres and similar other facilities in rural areas. Indeed, the infrastructural development that has taken place in the 1980s could be regarded as a 'boom' since never before the country witnessed such a massive expansion in physical facilities. As a result, not only the most rural areas have been linked with urban centres, but also the people have been provided with vital support and services for their socio-economic upliftment. Each upazila was transformed into a growth centre, facilitating business and commerce. Thus the inflow of huge external resources and the development activities of the upazila marked a new era for the otherwise remote and backward rural hinterlands.

In a country like Bangladesh where rural areas are characterized by very poor infrastructural facilities, the significance of infrastructure in rural development should not be underestimated. A BIDS-IFPRI study (1985) observed that agricultural production was higher in areas with developed infrastructural facilities. It also observed that infrastructure had

a positive impact on household income, food consumption and nutrition, employment and wages, and capital formation in rural areas. Obviously, all these are vital to the life and livelihood of the rural population and are integrally related to rural development. But at this stage a question must be posed: is infrastructural development enough for rural development? We would argue here that infrastructural development is a necessary but not the sufficient condition for rural development. Infrastructure is unlikely to have a positive impact on rural poverty and sustain it if other aspects of rural life continue to stand neglected over years. Also the effects of infrastructure on 'equity' remain to be fully investigated. Available evidence suggests that it is more likely to worsen the problem of inequality in the countryside as those with assets (of various kinds) are likely to benefit much more than those without. Development to be a meaningful and sustained process, infrastructural development requires to be supplemented with programmes and projects which bring direct benefits to the rural poor; this is something which the upazila has either failed to do or did not attempt to do.

The upazilas' failure to benefit the majority of the people created the grounds for growing NGO operations across Bangladesh, including the two upazilas studied. Indeed, NGOs in Bangladesh have registered a phenomenal growth, both in size and number, during the last decade or so, and have emerged as a part and parcel of the rural development process. The international aid donors have given a very high profile to NGO activities and consequently supported NGOs by putting funds for their operations. Currently most donors see NGOs providing better value for money, and are creating pressures on governments to move towards privatisation and the NGO sector. Surely, the present emphasis on NGOs as better providers of goods and services to the poor reflects a widespread belief that the government delivery system is ineffective and the decentralised upazila system has not worked. This belief and the preference of

donors has weakened local government as NGOs have now taken the lead in certain functions e.g. disaster relief, health and family planning and adult education, traditionally performed by local government. Whether NGOs are uniquely successful in helping the poor, and whether the impact of NGO activities on the poor is enduring, are matters which are extensively debated. Also debated is the issue whether NGOs have the commitment, capacity and necessary mandate to steer a comprehensive change in rural Bangladesh. These are beyond the scope of this paper and as such, we focus on more relevant questions.

The Upazila Decentralisation : Who Gained What?

It is now widely held that the upazila decentralisation programme was initiated and implemented by the military regime as part of its strategy to enhance the likelihood of its continuation in power. By decentralising authority to the upazila level, it wanted to muster the support of rural elites, create a patron-client relationship with them, and thereby serve its long term political goals: civilianisation, legitimization and consolidation of its power. Given these pressures, the regime had to install a system which assured that those it was trying to attract could see they would gain more power and better access to public resources by aligning with the regime. So the programme was devised to provide the rural elite with an opportunity to perpetuate their stranglehold on rural socio-economic life. Much of the rural elite recognised the new system as a vehicle for patronage, and by giving their support to the regime they took its full advantage. They competed to take control of the new system and those who won benefited enormously. This allowed them to use public resources channelled to the upazila for their individual and group interests through the processes described earlier. Indeed, the huge corruption, leakage, misuse and dissipation of project resources that characterized the upazila system was intricately related to the interests of the Ershad regime and the established power holders in rural areas. As an observer comments:

....local elites are aided and abetted in their desire to loot the public till by the central elites, whose primary goal vis-a-vis the countryside is to secure and hold onto the allegiance of their counterparts at local level....the abiding interest of those on top is to help secure their own future by building patron-client linkages to village elites (Blair, 1989: 242).

It is not only those elites in official control of UPZs who benefited, many outside UZPs also benefited directly and indirectly from the decentralisation programme. The decentralisation allowed these elites to dominate the distribution of benefits by controlling different committees and by other formal and informal mechanisms. By virtue of their socio-political linkages the elites benefited directly as contractors, suppliers, dealers, advocates, touts and brokers. They also benefited indirectly by shaping decisions about infrastructural facilities, roads, bridges, culverts, embankments and irrigation channels developed by the UZP. By contrast, the main benefit accruing to the rural poor was only a limited number of poorly paid employment opportunities created as a by-product of the upazila system.

Although the overriding aim of those in control of state power was to attract rural elites, they could hardly afford to overlook the civil bureaucracy which is such a powerful force in the country (see Maniruzzaman, 1979; Khan and Zafarullah, 1982). The introduction of the UZP with a public representative as its head exercising controlling authority over government officials significantly undermined the position previously enjoyed by the field bureaucracy at this level. A complex and messy 'game' occurred in the early years of the reform whilst bureaucrats (particularly the UNO) and politicians (particularly the UZC) vied for control of the upazila administration. Although in theory bureaucrats posted at the upazila level found their role had been reduced to an advisory one with no direct power or authority, in practice the interests of civil servants were accommodated by significantly expanding the bureaucratic apparatus at the upazila

level, and by using the introduction of the upazila system to effect widespread promotions. Subsequent policy adjustments⁸ permitted bureaucrats to maintain their privileged position and a high degree of autonomy from local political control. Their accountability to the UZP was more apparent than real. Since the appointment, training, promotion, transfer and discipline of the officials were in the hands of the central government, UZP had practically very little control over them. They were paid from the grants provided by the government. Though the UZC was empowered to initiate the annual confidential reports of the officers, neither he nor his council had any authority to reward and reprimand these officials on the basis of their job performance. Thus the officials enjoyed a high degree of personal autonomy within the decentralised framework. They, particularly the UNOs, were also given important roles in resource allocation and utilisation. Consequently, government officials benefited no less than the elite through their enhanced positions and through systematic involvement in corruption, often in collaboration with local representatives.

But the most important gains were made by the regime itself. The upazila programme yielded the regime political dividends for a period of more than eight years. Faced with increasing opposition from various organized groups (e.g., students, working, professionals and the major political parties) ever since its take-over, the military government recognised the need to appear as reformist and to create an impression that it was returning the country to democratic processes gradually. At the same time, by decentralising power at the local level, and by placing increased resources at the discretion of the UZP, the government sought to covertly win the support of what Blair has termed as the 'kulak class' for its incumbency and policies. The regime needed to capture such a class, at least in part, to neutralize the rural power-base of the mainstream opposition parties, and more importantly, to civilianize and legitimize its military government. The introduction of the upazila was the

first step towards this direction. This was followed by the floating of political party, Jono Dal (later renamed as the Jatiyo Party).

The regime's use of the upazila system as a ground for political mobilisation got its full expression when the first UZP elections were held in May 1985. Although the elections were officially held on a non-party basis, no sooner were they over than the regime claimed that its own party, the Jano Dal, had won in 207 upazilas. The upazila system allowed the regime to gain a foothold in rural areas. Politically the regime gained further through upazila elections when a total of 120 independents and opposition UZCs defected to the Jano Dal and became supporters of government policies and programmes. Thus the upazila elections enabled the regime to gain control of a majority of the country's 460 upazilas. By doing so the regime created a new constituency, which lent vital and powerful support to it until the very last days of its rule. In the second upazila elections held in 1990 which were keenly contested by almost all political parties, the government sponsored Jatiyo Party captured 197 upazilas. Many more UZCs later joined it, although their number was never precisely known.

However, the greatest success of the upazila was that it helped the government to win two national elections - the parliamentary elections in May 1986 and the presidential elections in October 1986. Although these elections were not widely contested by all the opposition parties and coalitions and came to be viewed as a 'tragedy for democracy', politically they marked the end of the transition from military to civilian rule. By holding these elections, the regime established itself as a civilian government and further consolidated its position. Thus these elections allowed the regime to prolong its authoritarian rule in a civilian guise.

However, the decentralised upazila system could not keep the regime in power for an indefinite period. Although by coopting a large proportion of rural elites into the governmental patronage

networks, it acted as a 'safety valve' in absorbing or reducing anti-government tensions in rural areas for a number of years, it was not a mechanism that could do the same job in urban areas. By 1990 the regime was trapped with a narrow support base amongst the politically powerful urban population. The anti-government movement gained such momentum that the regime did not dare to face by the use of force. The combined movement of students, intellectuals, the urban middle class and the major political parties forced the government to handover power to a caretaker government thus putting an end to more than eight year's authoritarian rule. Ershad's cynical use of decentralisation had been effective only in rural areas but his inability to manipulate urban politics led to his downfall. The new political leadership of the country dissolved the upazila scheme and thus chose to return to the status quo.

4. Decentralisation Theories and the Bangladesh Experience

The analyses presented in the preceding pages make it clear that the upazila decentralisation programme has not performed as was expected. Whether judged against the managerialist case (i.e., increased efficiency in service delivery) or in terms of its democratic political rational (i.e., promoting grass roots participation), or from the developmentalist perspective (i.e., accelerating social and economic development), the performance of the upazila decentralisation programme has fallen far short of expectations. In an ideal world a decentralised government may be responsive to local needs, evoke popular interest and enthusiasm, deliver services more efficiently and be directly accountable to the local populace. However, the Bangladesh experience shows that in real world contexts such promises take on an air of naive utopianism. There is hardly any evidence to show that the values ascribed to decentralisation held good in Bangladesh for the 1980s. The design of the upazila was based on the liberal democratic theory and normative management. In practices neither of these worked in ideal fashion. The findings of the study point to the dangers of neglecting contextual factors

when considering the benefits of decentralisation policies and of treating decentralisation as '.... a value in its own right' (Smith, 1985: 191).

The popular expectation that decentralisation would make the administration responsive to local demands and lead to a better and more efficient delivery of governmental services has largely been frustrated given the pervading bureaucratic culture, and the extent of corruption and irregularities that characterised the programme. The overall picture that emerges supports the pessimistic school of thought on decentralisation rather than the ideas put forward by its advocates. The manifestations of corruption and mismanagement were evident in all the spheres of upazila administration we examined. Bribes, personal contacts, bonds of kinship, patron-client relationships and political identity were found to be so strong as to overpower any thoughts of administrative rectitude or social justice. With hardly any evidence to show that the upazila system has resulted in a significant improvement in the delivery of governmental services in rural areas, the greater responsiveness argument for decentralisation is redundant in the Bangladesh context.

The upazila experience further suggests that decentralisation is not necessarily a vehicle for greater participation in decision making by the mass of the rural population. The upazila programme has failed to enable the majority of local people to participate in the administration and management of local development. Those who became chairmen and members of the UZP were not only unrepresentative of the vast majority of the rural population, but also remained unaccountable to them. An analysis of the socio-economic and political background of these UZCs and members shows that they were drawn from an elite stratum of the rural population (Ahmad, 1986). Their socio-economic position and their control of the means of rural livelihood made any idea of their accountability to the rest of the population simply absurd. Since there was no institutional device that could enable the bulk of the population at the lower

strata to share power effectively, their participation was restricted only to electoral behaviour which did not follow the ideals of the liberal democratic model. Instead, patron-clientelism and block votes appeared to have played an important role in the electoral process. Thus the election system proved to be less effective than was intended. In addition, the upazila elections were marred by '....widespread ballot blocking and violence' (McCarthy, 1987: 3; Bertocci, 1986: 230), which not only negated the possibility of political representation of the poor but also prevented many of them even from exercising their democratic right to vote.

Thus, the political rationale of decentralisation (i.e., it would lead to better public accountability at lower levels) was not borne out. Contrary to improved public accountability in the management of upazila affairs and the delivery of public services, the decentralisation programme has provided a kind of 'blank cheque' (Blair, 1989) to those involved in the upazila management. This is reflected in the incidence of corruption and irregularities by both local representatives and government officials. Systematic abuse of public finances seems to have been the norm, rather than exception. Accountability mechanisms to identify these problems and solve them remained largely ineffective since local representatives are not replaced by those who will do things better (as democratic theory supposes) but by competitors who have developed larger vote-banks through social and economic positions and promises of patronage, and will use the system in a similar manner.

The literature on development in Bangladesh is almost unanimous in its conclusion that the rural poor lack access to inputs and services, and that even programmes designed specifically to benefit the poor often end up being captured by elites. The upazila decentralisation was based on the assumption that moving administration closer to the people would improve the access of low income and disadvantaged groups to government services and thereby benefit them. But our empirical

investigation casts doubt on this assumption, and the efficacy of decentralisation in making administration more responsive to the needs of the poor. Since the upazila decentralisation did not create opportunities for the poor and underprivileged to assert their interests, the physical proximity of government did not help them to overcome problems of access to government benefits and services. This explains in part, the situation of majority of the rural population, despite the increased governmental spending through upazilas.

In some contexts, clients dissatisfied with the delivery of goods and services have the options to either exit (stop using such services and use other services) or to voice (express their dissatisfaction to a higher authority) (Hirschman, 1970; Schaffer and Lamb, 1974). But in a society like Bangladesh, for the majority of the people the exit option is not possible and the voice option is ineffective. This is because, the services provided by the government are often the only ones available to the poor, and as such, they are not in a position to exercise their choice of 'exit'. They are not effective in raising their 'voice' as they lack the necessary political clout to make their 'voice' heard. Also they are handicapped by their low level of awareness about their rights, lack of necessary education and above all, lack of organisations through which to exert pressure for policy changes in their favour.

While the poor have remained largely untouched by the new system, some of the elites benefited enormously. Thus our findings strongly support the elite domination hypothesis, that decentralisation serves as a vantage point for elites to dominate local institutions and use them for their own benefit. The upazila programme has allowed the rural elites to take control of the UZP, and use 'local autonomy' to further their individual and group interests, often at the cost of the majority. By virtue of their newly sanctioned positions, these elites became more powerful than before and found it easier to augment their hold over local socio-economic and political affairs. They used and abused their

position for narrow self interest by compromising the interest of the poor majority and thus dashed the hopes of representative local government postulated in normative theories.

The foregoing analysis reveals the paradox of decentralisation theory and practice in Bangladesh. Thus the Bangladesh experience warns us against any sweeping generalisations of the values and impacts of decentralisation. It also suggests that most of the existing theoretical perspectives are narrow and often inadequate in explaining and analysing decentralisation policies in developing countries. The liberal democratic theory holds little promise in the Third World situation where things hardly work in an ideal fashion. The rhetoric of decentralisation was 'good governance', however, the practice of it was totally different from accountability, transparency, good public sector management. The public choice school appears to be largely redundant in Bangladesh, perhaps in many other similar contexts, as much of what has been proposed under it have not been borne out. The management theory also falls short in analysing the complex process of decentralisation that involves a set of social, political and institutional interactions. Though the contingency theory of management has advanced beyond the simplistic 'ideal' notion even it does not appreciate the complex, context-specific social and political factors that characterise the formulation and implementation of decentralisation policies. What appears to be clear here is that the effects of decentralisation policy is determined by the broader context within which the policy is executed and the socio-economic and political forces that shape its implementation. Therefore, the political economy framework appears to serve better in explaining and analysing the processes and results of decentralisation in today's developing world.

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POLITICAL ECONOMY OF THE RURAL SOCIETY : A STUDY IN ADAMDIGHI THANA IN BOGRA DISTRICT

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INTRODUCTION

It is widely viewed that dominant and powerful elements of the agrarian structure outlive in Bangladesh while influencing the power-base in the society, income and wealth distribution and the access to the local bodies of government and their resources. These help the process of enveloping the categories of beneficiaries of rural development programmes. A study of the Bangladesh village society is therefore significant to explore the effect of the structure and organisation of rural society and the agrarian system on poverty.

In this paper, an attempt is made to analyze selected issues of the rural society and its agrarian structure in Bangladesh. On the basis of field investigation conducted in Adamdighi thana (then *upazila*) (sub-district) in Bogra district, the author here examines the extent, origins, character and continuity of the crisis persisting in the countryside. The factors used in looking at the problem are ownership, social structure and state control.

AGRARIAN SOCIETY : SOME KEY POINTS IN QUESTION

Rural living conditions in Bangladesh has registered a decline over the last few decades, and indeed over the centuries¹. Notably, the majority of the rural population have been painfully experiencing hardship and they are now caught in the grip of wicked poverty. The middle peasantry is exposed under dreadful economic coercion as its majority is stepped down in a situation of high rate of income concentration and land dispossession². To search the historical background of present agrarian crisis, it is worth studying the political economy of land reform which the state initiated under its programme of intervention from time to time.

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The Political Economy of Land Reforms

The implicit agenda of the state in Bangladesh was to warrant the rural power elites to dominate the rural scene which is why the land reform programmes launched by various governments failed to benefit the poor. Wood is perhaps authentic in giving his interpretation that it cannot be expected that the state, which depends on the prevailing rural inequality and structures of power and authority in the countryside to maintain the rural 'stability', would undertake any serious measure to reform the land owning system in favour of the poor³.

Habib⁴ and Abdullah⁵, in their studies, explained that the British rulers introduced the most ruthless nature of land reform ignoring any rights in land among the actual tillers of the soil, then classified as 'tenants' of the *Zamindars* (landlords acting as intermediaries between established authority and the tillers of the soil).

In the post-colonial period, there was no major policy shift on this crucial matter except what the ruling Muslim League government decreed in 1950. The East Bengal Estate Acquisition and Tenancy Act of 1950 invalidated both the Bengal Tenancy Act of 1885 and the Permanent Settlement of 1793. Abolishing the *Zamindari* system, the land ceiling was fixed at 33.3 acres. However, the redistribution effects were quite insignificant as the Act failed to jolt the traditional land ownership pattern.

In 1961 the ceiling was raised to 124 acres. In analyzing the social base of the Ayub military regime, Gupta refers to the work of Saghir Ahmed who undertook one of the rare micro studies of rural Pakistan in 1964-65. Saghir found that the reforms failed to change the rural economic or political power structure as the control of land had remained in the hands of the original owners ... The ranks in the power hierarchy corresponded to those in the economic hierarchy⁶.

In post-independence Bangladesh, most of the ruling regimes explicitly shown their interest in land reform but in reality,

ironically, they remained busy in consolidating their power-base and therefore strengthened the alliance between the dominant power elites and themselves. Whatever peripheral changes were introduced by the Mujib, Zia and Ershad regimes, these by no way helped solve the problem of landlessness and share-cropping.

A clear deterrent to a radical land reform in Bangladesh is the power structure of the rural society itself. Hossain explains that power holders both at national and local levels are representatives of landed interests and hence they are unlikely to initiate or support land reform which will basically go against their interest. Against popular pressures they can at best undertake legislative measures which will bring only marginal changes, and again this would be done in such a way that there are plenty of loopholes through which the law can be evaded⁷.

Land Concentration and Related Issues

The concentration of land ownership is fairly high among the rich peasants (see Table 1). The percentage figures refer to percentage of agricultural land owned. The top 10 percent of rural households in income terms claim ownership of 50 percent of the total agricultural land and the bottom 60 percent owns only 9 percent. Abdullah, Wood and Westergaard⁸ observe a clear process of differentiation and class domination which in Jahangir's words 'let to the formation of a rich peasant layer on the one hand, and a depressed layer of impoverished peasants composed of middle and poor peasants on the other'⁹. Both Jahangir and Wood¹⁰ observe that the policies of the state have led to the rise of rural entrepreneurs whose interests merge with those of their urban counterparts. In their recent works, Jahangir¹¹ and Wood¹² illustrate the same nature of problems in Bangladesh rural society and reflect the same view they held in 1976.

However, the control over land is more complicated than appears from the distribution of ownership. Share-cropping and mortgaging are also the pre-dominant forms of exploitation

which in effect contribute to the consolidation of the class of rich peasants. The big landlords have dual roles in the exploitation process as the owners of land as well as money-lenders in exchange for mortgage.

Table 1 : Extent of Inequalities and Land Distribution in the 1960s and 1970s

Group	% Agricultural land owned			
	1960	1968	1974	1978
Bottom 60%	25	24	19	9
Middle 30%	39	40	43	39
Top 10%	36	36	38	52

Source : S. R. Osmani and A. Rahman (1981) 'A Study on Income Distribution in Bangladesh', Dhaka: BIDS. mimeo.

Table 2 shows the growth of landlessness in the country. The annual growth rate of rural population is 1.87 percent over the last two decades, but the growth in landlessness over the same period is 2.05 percent.

Another village study by Rahman¹³ reveals that concentration has been increasing consistently since the early 1950s and that the rate of increase has been greater in the 1970s. While the bottom 60 percent of the households owned 24.35 percent of total land in 1951, their share has fallen to only 12 percent by 1981. At the other end of the spectrum, the top 10 percent of households have been gaining land consistently and the pace of the enlargement of their holdings was greater in the 1970s than in the 1960s. While the top 10 percent of households owned 34.81 percent of the total land in 1951, the share had increased to 47.85 percent in 1981.

Table 2 : An Estimate of the Growth of Landlessness

Population	1960	1982	Annual Rate of Growth (%)
Total	53.9	92.0	2.46
Rural	51.4	72.2	1.87

Households (000)			
Total	9603	15072	2.07
Rural	9132	12892	1.58
Landless Households (000)			
Total	3525	6948	3.18
Rural	3054	4768	2.05

Source : M. Hossain (1986) 'A Note on the Trend of Landlessness in Bangladesh', The Bangladesh Development Studies, Vol. 14, No. 2, p. 2. p. 151

MORE RECENT DATA

In this section, the author analyses different aspects of the rural society in his study thana : Adamdighi in Bogra district. To start with describing the methodological framework of this empirical part of the study, the author explains why a selected sampling technique and some research tools were employed in his field investigation. Then an attempt is made to describe the basic features of the area and critically analyze the socio-economic and political conditions of rural people in five study villages.

On gaining a reasonably detailed understanding of the theoretical and problematic framework of the study, the author carried out the field research in Adamdighi thana in Bogra district in the Northern Bangladesh. The duration for the field work was about 6 months-from the beginning of May to the middle of October 1989.

The author selected five villages in the thana for his field survey, namely, Talson, Bara Akhira, Malson, Sandira and Kundugram. In selecting the villages, he attempted to address the diversity of the socio-economic situation of the country. Each of the five villages has some distinct characteristics, which, in total

gave a broader perspective to the study. The characteristics he considered in selecting the case villages are : *Talson* has the closest and easiest communication from the thana headquarters. *Bara Akhira* has a numerically dominant Hindu community, unlike in Bangladesh as a whole, where Muslims outnumber Hindus. *Malson* is a predominantly Muslim village which represents more agricultural labourers than owner-cultivators. *Sandira* is a village which has more industrial labourers than farmers. *Kundugram* reflects the legacy of feudal lordship and control. Forty years ago feudal lords were in power in this village.

Following the proportionate stratified sampling technique, the author selected a sample size of 250 from a population size of 2642 households. The selected five villages were also treated as strata and the sampling unit was a household, as defined by the last population census (1991) of the country. A structured questionnaire, with both open and closed ended questions, was administered among the finally selected target population. He also used a number of non-directive methods, which he found very effective in gathering in-depth information. This gave him profound insight into the exclusive life-time data of a selected number of informants.

THE RURAL SCENARIO IN ADAMDIGHI

Bogra district occupies a physical area of 1501 square miles, including a riverine area in which Adamdighi thana occupies 64.61 square miles, situated at the west end border of the district. It is relatively a small thana among the 11 thanas in the district. It is a prosperous business centre with telephone and electricity facilities.

The density of population in Adamdighi is well above the national average (1817 per square miles against 1567 in Bangladesh). The percentage of rural population is also higher than national average (92 percent as against 84.8 percent in the country). Sex ratio is 104 males per 100 females in Adamdighi as

against 106 males per 100 females in the whole country. Agricultural labour force as percentage of total labour force is 57 in Adamdighi, compared with 55 in the whole country. Population per hospital bed is 3257 in Adamdighi against 6219 in Bangladesh. The percentage of adult literacy is 28.1 in this thana while it is 24.8 in the country¹⁴.

Though Adamdighi may contain some typical characteristics of other thanas of the country, proving its typicality is difficult as the national aggregate data hide quite marked local variations. The author, therefore, stresses that Adamdighi is not untypical, but inevitably it has a number of particular features of its own.

The reason for more density of population in Adamdighi is thought to be its fertile land and agricultural productivity. Not only does Adamdighi's 75 percent arable land produces two or more crops a year but also 60 percent of its arable land is covered by irrigation. It also explains why 92 percent of the population live in rural areas and 57 percent of its labour force is agricultural. It also has 51 food storage. In Santahar (in Adamdighi thana), there are 43 food storages in the Central Storage Depot (CSD), one of the five of its kind in the country. However, agricultural growth has not ensured equal distribution of income or opportunities. Better health and education has not yet been possible for the thousands of poor villagers. There are various other problems in the rural society as well.

Land and Economy : The Message from Adamdighi

Historically, Adamdighi was under the rule of the *Zamindars* for several hundred years during the Mughal and British period. But the 'Permanent Settlement', introduced by the British in 1793, gave the local Hindu Zamindars of Chhattiangram an opportunity of *Zamindari* exploitation which continued until 1950. By then, the prosperity of this fertile part of Bogra was gone. It was reported to the author by many elder villagers that their grandfathers had to sell all their crops to pay rent to the

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Zamindars. The *Zamindars* could fix any amount of rent¹⁵. This was not the case with rich peasants like the *Talukdars* (rich peasants who always had a warm relationship with the *Zamindars* and also worked as their rent-collecting agents in local areas). Both the *Zamindars* and *Talukdars* grew rich while poor peasants remained poor. It is also known to the people, though not recorded in history, that during those days thousands of Muslim tenants were tortured by Hindu *Zamindars* for not being able to pay rents. Hindu dominated Chhattiagram and Kundugram villages are the cases in point. In these two villages in particular, many people became homeless and migrated to other places to live. Indebtedness, landlessness, starvation and poverty made many villagers dependent on the rich peasants and landlords for survival. A strong patron-client bondage is known to have existed in these villages during the 18th and 19th centuries.

Gupta recorded that the percentage of the agriculturists in debt in the region was no less than other parts of Bengal¹⁶. Hunter revealed that in 1871 the rates of rent per acre of land was taka 4 in the locality while the price of rice produced by the same land was taka 5¹⁷. In 1910, Gupta also observed:

*The great rise in the value of agricultural occupancy holdings is a sure proof of the advancing prosperity of the rich agriculturists in the locality....A great advance has been made in the material prosperity of the well off agricultural classes. The thatched dwelling houses are gradually making room for houses with roofs of corrugated iron*¹⁸.

Agricultural labour wages were also very low. The collector of Bogra district in his Administrative Report for 1872-73 made the following remarks:

*The labourer receive from Taka 12 to 18 per annum, live on rice, pulse and potherbs, with an occasional fish.....and wore during the year two pieces of cloths. His wife, with a somewhat ambler cloth to cover her, was worse fed than her husband*¹⁹.

Following partition in 1947 and the creation of Pakistan, there was a great deal of emigration of rich Hindu *Zamindars* and *Talukdars* from the study area to India. Similarly, a few Muslim rich peasants from eastern part of west Bengal (India) migrated into these villages. Interestingly, even after the emigration and the implementation of East Bengal State Acquisition and Tenancy Act of 1950 the land ownership pattern did not change drastically. It is, however, reported that Hindu dominated *unions* like Chattiangram and Kundugram were affected significantly in terms of ownership rights of land. The rich Muslim tenants, migrant Muslim tenants and migrant Muslims became owners of the land previously owned by the Hindu *Zamindars*. In the other three *unions* some small Muslim *Talukdars* who enjoyed hundreds of acres of land lost their control and became ordinary landowners. Their tenants who actually cultivated the lands earlier, became the owners. But there was no redistribution effect and the conditions of poor peasants remained the same.

In the late nineteen forties and early sixties, during the periods of famine and depression, the agricultural labourers in the areas faced problems of employment. There was a drop of 6 percent in the number of labourers²⁰ as they sought alternative means of livelihood. Many labourers migrated to places like Santahar and became factory or railway labourers. The agricultural labour wages were something between taka 60 to 80 per annum. But the prices of food and other essential products also registered tremendous increase over the years²¹.

Table 3 shows the results of a sample survey into the problem of indebtedness of agricultural farms in 1960. It reveals that indebtedness was more severe among the poor peasants. 52.8 percent marginal farms were in debt as against 3 percent top land owners. It also indicates the dependency of poor peasants on their masters who, in the absence of rural credit banks, had to rely on the money lenders for support. It was also felt by many elderly respondents that landlessness in the local villages began long

before 1950s. Poor peasants, being unable to pay higher interest on their borrowed capital, were forced to give their mortgaged land to the landlords and money lenders. Table 4 reveals the growth of landlessness, land dispossession and land concentration in the study villages. The author categorised the 'poor', 'middle' and 'rich' farmers on the basis of what has been defined in the Bangladesh Agricultural Census 1983-84.

The table clearly shows that the number of landless households increased from 20 in 1959 to 27 in 1989, an increase of 35 percent. Over the years, land was concentrated from the hands of the poor and middle class to the hands of the rich. The middle group, owning from 2.34 to 7.33 acres of land, was 89 in 1959 but it came down to 38 in 1989, a sharp decline of 57 percent. The number of rich peasants also reduced from 18 in 1959 to 7 in 1989. But what is more significant is the fact that they still hold nearly half of the land owned by all groups. Data shows that 250 respondent villagers own a total of 567.5 acres of land in which

Table 3 : Indebtedness of Agricultural farms in Bogra District in 1960 (in acres)

Size of Farms	Total Number of Farms	Farms Reporting debt	% of Farms Reporting debt
Under 0.5	14,870	7,860	52.8
0.5 to under 1.0	14,840	6,150	41.5
1.0 to under 2.5	59,740	26,870	44.9
2.5 to under 5.0	64,870	28,630	44.1
5.0 to under 7.5	16,540	3,780	22.8
7.5 to under 12.5	11,260	1,610	14.2
12.5 to under 25.0	4,140	190	4.5
12.0 to under 40.0	600	12	2
40.0 and over	100	3	3
Total	186,960	75,105	40.17

Source : GOB (1979) Bogra District Gazetteers, Dhaka.

Table 4 : Household Ownership of Land in 5 study villages (1959-1989)

Year	Poor		Middle	Rich				Total
	Landle ss	0.05- 2.33	2.34- 7.33	7.34- 10	11-20	21-30	31- above	
1959	20	123	89	8	2	3	5	250
1969	22	135	77	7	2	3	4	250
1979	24	165	51	3	2	2	3	250
1979	27	178	38	1	1	2	3	250

243 poor and middle farmers (97.2 percent respondents) have a share of only 301 acres (53 percent) and 7 rich farmers (2.8 percent respondents) own 266.5 acres (46.9 percent).

The agrarian crisis deepened as the rate of land dispossession increased after the independence of Bangladesh. There is a causal relationship between the dispossession of land and the role of local government. Due to bureaucratic apathy towards poor people all rural development programmes and resources benefited the surplus farmers. The problem of access to the distribution system compelled the poor to remain ever more dependent on their local patrons and that led to the dispossession of mortgaged land over the years.

Land reforms initiated by Mujib and Ershad did little to help the poor farmers. The author has already discussed that land reform policies failed to assure the rights of share-croppers and tenants in Bangladesh. It was reported to him that in Adamdighi thana, at least 15 big landowners adopted illegal measures to transfer their land to other relatives so that the excess over 33.3 acres could not be taken away by the government. One such person (a landowner) admitted that the thana land officials cooperated with him in exchange for bribes. This can be interpreted in terms of a dominant coalition between the local elites and local bureaucracy. It was also reported that, like in other places in Bangladesh, the share-croppers and wage labourers were cheated and exploited by the local landlords.

Interestingly enough, the ceiling of land ownership was fixed by Mujib at so high a level that land made available for redistribution was less than 1 percent²².

Agrarian Groups and the Level of Income : View from Five Villages

Table 5 shows the distribution of different groups of cultivators in the study villages. The number of share-croppers and mortgagors are highest among the poor peasants while the number of mortgagees is nil. On the other side, half of the rich peasants and one-third of the middle farmers are mortgagees.

Table 5 : Agrarian Groups in 5 Study Villages

Income	Landless	Owner cultivator (oc)	OC+Shar e-cropping	OC+Mort gage in	OC+Shar e-cropping out	OC+Mortg age out	Total
Poor	27	39	86		12	41	204
Middle		5	6	14	11	2	38
Rich		2		3	2		7
Total %	27 10.8	46 18.4	92 36.8	17 6.8	25 10	43 17.2	250 100

Table 6 suggests that in Adamdighi thana, people in the highest income bracket are agriculturists and businessmen. It is also important to underline the point that rich peasants are interested to invest their surplus into business of various types, e.g. hoarding of crops, selling agricultural inputs, irrigation water and so forth.

Table 7 shows that more people enjoy income from land and business than any other double sources of income (12.4 percent). The surplus earnings from land are invested in business which brings the maximum return. It is interesting to see from the data that only 7 out of 250 respondents (2.8 percent) have had a 500 percent increase in income in the period between 1969 and 1989. Only 5 people (2 percent) are enjoying a similar increase in their

size of land. On the other hand, 141 and 149 people (56.4 and 59.6 percent) have experienced a sharp decrease in their share of income and land respectively.

It was revealed during the field work period (boro season) that the landlords control the irrigation business and sell water to those who do not have the capability to buy a power pump or a tube-well. Bharti calls these waterlords the 'Irrigation Mafia' in the context of Bihar²³. Selling water to poor farmers is a monopoly business for many of them. It is also attractive in

Table 6 : Income Level in 5 Villages (Yearly, in Taka)

Occupation	Under 25,000	26,000- 50,000	51,000- 75,000	76,000- 100,000	101,000- 125,000	126,000- above	Total
Unemployment	27	1	1	2			31
Agriculturist	139	11	6	9	3	2	170
Wage earner	21		1				22
Service Holder	3	1	1				5
Educationist	3	4					7
Businessman	7				1	1	9
Professional	3	1	1	1			6
Total %	202 81.2	18 7.2	10 4	12 4.8	4 1.6	3 1.2	250 100

Table 7 : Source of Income by occupation in 5 villages

Occupation	None	Land	Business	Land and business	Land and service / wage / professio nalism	Service / wage / professio nalism	Total
Unemployed	31						31
Agriculturalist		144		26			170
Wage earner					10	12	22
Service holder					2	3	5
Educationist					4	3	7

Businessman			4	5			9
Professional					3	3	6
Total	31	144	4	31	21	19	250
%	12.4	57.6	1.6	12.4	8.4	7.6	100

Adamdighi where 60 percent of the arable land is covered by irrigation. Here again the role of bureaucracy comes into question. In a study village, for instance, the author found a corrupt waterlord who is widely known as a 'negotiator' with local bureaucracy. He monopolises the water business. There was widespread resentment among the villagers for the way he was favoured by the local government. The author came to know that the waterlord bribed the officials to get this job done. More such cases were revealed during the informal interviews with people.

It was seen that 84.8 percent of respondents remained in their father's occupation. This is partly because most rural people are not interested to leave their homestead, but mainly because they are illiterate (72 percent of the respondents) and have virtually no scope to go elsewhere for alternative occupation. It is the economic structure of rural society that generally made it impossible for the son of an unemployed father to get a full-time employment. Over the period of years, therefore, the number of wage earners and unemployed has increased from 15 and 24 to 22 and 31 respectively.

The proportion of landless people has increased from 18 to 27 over the period of a generation. Similarly the number of poor peasants owning 0.05 to 2.33 acres of land increased by 22 percent. The picture in the middle stratum of peasants is different. Here the number of farmers owning 2.34 to 7.33 acres has reduced from 47 to 38. It is likely that 9 of them have merged into the lower stratum, but the top few percent remained unchanged.

Concluding Notes and An Approach

After a long historical evolution in the land system and the rhetorical programme of land reform, the concentration of land ownership in the study villages is proved to be fairly high. The poverty and pauperization is largely caused by the problems of landlessness and the processes of share-cropping and mortgaging. Even money-lending, land leasing and other mechanisms shape an exploitative structure of clientelism in the rural economy.

Now it is time to review the past experiences in the light of present rural conditions where, to fight back hardship and impoverishment, some NGOs have gained considerable success in mobilising rural peasantry and landless population to develop grassroots organisations. This institution-building effort of the NGOs in Bangladesh has redefined the role of the state in rural development. In many places, particularly to the donor community and its intellectual quarter, government is now perceived as a development partner of NGOs. The motive of recent studies on participation and UNDP, endorses the view that donors are now ever more interested in identifying the role of NGOs in development and will thereby advocate more Government-NGO cooperation in fields like *khas* land distribution (*khas* land is government-owned land that is often used by the rural elite for grazing or cultivation but according to the law which may be given out on lease to landless villagers), pond re/excavation, market raising and other poverty-alleviation programmes.

From sustainable development point of view, the problem of those living in the river embankments (and also affected by frequent drought, flood and impoverishment), for example, first low cost housing can be built to arrange their settlement. In this regard, *khas* land can be procured from the government. This is a kind of land reform which can be adopted without massive structural change, yet provide the scope for both NGOs and

government to take up the responsibility of socio-economic transformation of these people through forming group organization, providing education, training and motivation and later on giving credit for income generation on off-farm and on-farm activities. Through this process the poor peasantry and other vulnerable rural population can be brought towards development.

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TRADITIONAL ADJUDICATION IN RURAL BANGLADESH : A STUDY

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Abstract

The rural *salish* exists as a manifestation of traditional social institution. It operates within the informal rural political system as a conflict resolution machinery. Villager's views of life, their love, and respect for antiquarian institutions like traditional institution of hereditary leadership, patron-client relationship, religious syndrome for changeless hinterland technologically backward with a little or no incidence of agricultural modernisation. The rural court in Bangladesh is one of the oldest social institutions occupying an honourable position in the village as a symbol of social integration. Social integration based on the instruments of values and norms¹ demand loyalty and obedience of the villages to the age-long ruling structure. The legitimacy of control is thus fixed by well prescribed sets of customs and social sanctions.

Introduction

Rural *salish* is considered to be a 'functional entity' and a custodian of rural political culture. It is miniature reflection of judicial administration or administration of justice attempting to resolve any conflict that may appear as a challenge to the authority or as confrontation or interpersonal hostility.

This paper attempts to show how traditional mechanism of control is reinforced through rural *salish*. Besides, we intend to probe the pattern of judicial administration at the micro-level and the style of its functioning.

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Method

The study is based on fieldwork. The authors worked in a village situated in the district of Pabna, Northern Bangladesh. During their stay the authors attended the informal village court that happened to meet sometimes for mitigating conflict. The purpose was to see the number of the prominent figures who were to be reckoned with at the court. While attending the court the authors kept a vigilant eye to watch whether there was any tendency to manipulate and influence the conflict resolution machinery by any dominant individual or group. During the time of conducting fieldwork the authors collected 102 recorded cases for analysis.

Traditional *darbar* (Court) in the study Village :

Literally the term *darbar* means meeting. The villagers use the term to denote a *salish* for conflict resolution. Disputes of any kind are referred to the *darbar* for amicable settlement. In the event of any conflict among the villagers they say "call *darbar*". The meeting of the village leaders for the settlement of the disputes held at the veranda of the *pradhan's* (headman) residence, may be referred to as *darbar*. The *darbar* in the study village deliberates very much to offer a compromise formula for the crisis. The reason is that any impasse or crack in the system will affect the entire *samaj* body (community structure) thus leading to the complete 'breakdown of the normative order'.²

Court's decision is highly honoured notwithstanding the fact that it is not binding upon the *samaj* people. The court seems to use its traditional influence to implement its decision and command the acceptance of the disputants. Even to-day, *darbar* is such a strong social entity that most cases and events of greater rural significance are submitted here for proper adjudication. The villagers tend to mitigate any conflict through the mediation of the rural court. Any outside involvement in the management of their disputes is thought to be harmful undermining the status of

the village as a distinct social entity. Community's identity is linked at large to structure of *darbar*. Traditional community structure has inserted the villagers into continuous system of institutional solidarity. It is through this operative unit of cohesion and solidarity that integration of social relations is maintained.³

We may argue that socio-economic implications of political domination speak of the structure of *samaj* relations with its underlying ideological forces.⁴ Here lies the roots of exploitation or what goes wrong with the system that may cause disruption. The dominant groups try to control access to resources and thereby maintain their strategic position. They way they manipulate the things in the *darbar* operating as 'instrument of coercion' leaves little room for egalitarian values and equal participation.⁵ The rural court in this sense is elite's own creation to subjugate the feeble and inarticulate masses. The ruling elite is likely to use this traditional machinery to prevent any challenge to the on-going structure from growing. The villagers, it is observed, share the common views (values) that any gesture of disobedience or disloyalty to the *darbar* is presumptive act and is subject to severe punishment.

Although the decisions of the court may placate a class of strategic position the *darbar* in many cases treat the issue under trial impartially in search of amicable settlement. One point of interest is : can *darbar* function well in a highly segmented and stratified social structure to ensure social justice? The thing is that the poor's position in such an institutional setup is susceptible to oligarchic exploitation. There is hardly anybody to fight for the poor's case. Anyone found doing so is motivated by political consideration. The above contradiction about the rural court may be legitimately raised. The rural court in fact functions in the adverse climate of class differentiation. The institutional structure with feudal trapping accounts much for lopsided relationship and elites manipulation of power and political game. The social roles are embedded in a rigid

hierarchical arrangement in response to differential access to strategic resources. The rural 'notables' or 'natural leaders' find it easier to steer *bichar* (court) proceedings in their favour. The personnel in the proceedings more or less affected by adverse situation cannot maintain a position of neutrality. Various interest groups appear to lobby in or outside the premise of *darbar*. The arbitrators who earn reputation for successful arbitration may tacitly favour a particular individual or group. This amounts to the pseudo neutrality of the judges. Or in certain circumstances a ruling elite may call *darbar* to punish a particular person or group found guilty of challenging his authority or violating social norms or standards.

These sets of undesirable circumstances now prevalent in the village have demoralising effects on the rural judicial administrative structure. The judges are found to be resorting to double standard which is absolutely unethical system from the control of the ruling elites who make important decisions regarding the administration of village affairs. Hence the rural court cannot be studied in isolation from the political context of domination.

We may visualise three sets of organisation as for traditional judicial administration at the micro-level depending on the observation of the study village. First, the *bari* (homestead) based *darbar*; second, the *para* (neighbourhood) based *darbar*; and third, the village based *darbar*.

In the study village kinship solidarity is so strong that minor disputes among the interacting households within the homestead premise representing residential proximity of patrilineal descent agnates are settled by the homestead based *darbar*. The lineage leader in consultation with some elder members resolve disputes between any two interacting households. This may be termed as lineage court. Interestingly the conflict between two households economically polarised indicates weak kinship relations within the lineage group. Bad internal relations in the homestead reduce.

the status of the lineage court. Thus if weak kinship relations because of the presence of exploitative structure exists in the lineage group, the lineage leader is unable to command unity. In such a situation cohesiveness of the kin group is bound to diminish. There is a relationship of exploitation between the rich and the poor farmers in the kinship group. It has happened several times that land disputes within the kinship group in the homestead are submitted to the *para* village level court for settlement. Sometimes they lead to higher court cases. *Para* (neighbourhood) based *darbar* occupies a strong position. Because, from organisational point of view each *para* represents a *samaj*. The study village is composed of a cluster of *paras*, each enjoying separate political status and forming a separate *samaj*. *Samaj* has been institutionalised through the acceptance of the authority of some persons in order to maintain ordered and disciplined life. This political institution, *samaj*, is founded upon reciprocal relationship, common identity, and strong neighbourhood generated by the proximity of residence. The *para*- based *samaj* is definitely a unit of judicial administration in the village. The identity of the *para* based *darbar* is reflected in the settlement of most disputes by the *para* leaders and prominent figures.

The village based *darbar* represents a complete network of relations. It has appeared as a symbol of judicial administration of the community structure. The core *samaj* in the study village functions as the village council and cuts across *para* boundaries, for problems that *para* leaders cannot solve, and for conflicts involving the families of any two *paras*. Inter-*para* political and economic interaction assigns to the village *darbar* a wide range of judicial functions. This broad based setup disposes of the bulk of the cases like land conflict, monetary affairs, marriage, divorce, damage of crops by cattle trespass and the like sometimes village based judicial body invites union parishad chairman or members for the settlement of village wide disputes.

Although the informal court of justice tries to amicably decide most disputes both significant and trivial, some unsettled cases are passed on to the formal village court at the union level for settlement. This village court at the union level consists of a chairman and two members to be nominated by each party shall be a member of the concerned union *parishad*.⁶ The formalised village court transcending the geographical boundary of each village within the union settles all types of cases. The cases that informal village *darbar* cannot settle because of conflict situation and unavoidable political circumstance are usually sent to the higher courts beyond the village boundary for mediation. To quote Rahman:⁷

The village court have (has) been established with a view to bringing justice within the easy means of village people. Most of the village people are illiterate, they spend large amount of money for simple matters by filing the cases to the court. In most of the cases the village courts often influence the litigants to go to the upper courts to settle their disputes. This process is not only expensive but also time consuming. The upper level courts gives more priority to the cases of grievous nature brought by the villagers in a great number. For this reason many people have to sustain injustice done to them. In addition, the way of rendering justice is too complex that many people are simply afraid of going for justice. But after the establishment of the village court the village people are supposed to get justice easily and speedily.

On many occasions the decisions of the informal *darbar* were resented either by plaintiff or defendant. This necessitated the submission of some unsettled cases to the higher level courts for proper prosecution. *Upazila* court installed in 1984 followed marked a significant development in the realm of judicial administration at the local level. It is expected that the new system would enable the villagers to get justice at a minimum cost as the *upazila* magistracy and munsif court reached out to the rural litigants. Previously the rural litigants used to trek to the district town far away from their localities for justice. As a result most litigants felt reluctant to go far beyond the *upazila* area of

filing cases. The new system has started working quite recently. It would surely lead to increasing mobility of the rural litigants. On the other hand it is too early to examine how many cases have poured into the *upazila* court from different villages. We wish to make a through treatment of this phenomenon later on to determine the level of distant mobility and dynamism.

Table 1 : Distribution of cases settled within the village by the village darbar (rural court / salishiadalat)

Types of cases	No. of cases examined	No. of cases settled %
Landed property	21	12 (57.1)
Monetary affairs	11	10 (90.1)
Damaging crops	18	12 (66.3)
Cattle trespass	12	10 (83.3)
Matrimonial affairs	19	9 (47.3)
Incest	3	3 (100)
Violation of religious norms	7	7 (100)
Trivial affairs	11	6 (54.3)
Total	102	69 (54.5)

Table 2 : Distribution of cases submitted to the higher courts beyond the village boundary.

Type of cases	No. of cases submitted	Type of courts		
		Village court (Union parishad)	Upazila court	District level Court
Landed Property	9	2	2	5
Monetary affairs	1	1	0	0
Damaging crops	6	6	0	0
Cattle trespass	2	2	0	0
Matrimonial	10	4	5	1
Affairs	5	3	2	0
Total	33 (32.5%)	18 (54.5%)	9 (27.2%)	6 (18.1%)

102 cases have been selected during fieldwork for the study purpose. Table 1 clearly shows that most cases (67.5%) are decided by the traditional village *darbar* (court). Traditional village *darbar* includes lineage court, *para* based (neighborhood) court, and village wide court as the core social institution. The cases like incest and violation of religious norms are decided by the traditional *darbar* itself. For the treatment of such cases traditional *darbar* would not like to invite any outside involvement as they are considered to be strictly internal affairs. Decisions taken on these cases by the court are binding upon both parties to a dispute. No party dares to ignore the decision as such act would be treated as a gross violation and unpardonable presumption subject to severe punishment and penalty. In most cases the forced decision or verdict of the court affects the poor because of the vulnerability of their position in a class based social structure.

Table 2. indicates the number of cases submitted to the higher court of appeal. It clearly demonstrates the level of mobility of the rural litigants. Mostly the villagers prefer to go to the union parishad village court with their cases. The percentage of cases dealt with by *upazila* court is not less compared to the fact that it is a nascent institution.

The overall situation reflects that the institution of traditional court of justice operating at the micro level with time honoured customs and conventions still remains a strong entity.

Normally the village *pradhan* (headman) takes all the cases and trials are held before a jury. Trials takes the form of argument between prosecution and defense. The *pradhan* or any man appointed judge decides questions of customs, sums up the evidence for the jury and discharge the accused or passes sentence. In consultation with the lodgeer of complaint the *pradhan* or judge fixes the date of the *darbar*. If parties to a dispute belong to two different *paras* (neighbourhood) the village headman in consultation with the leaders of the concerned *paras*

may request influential elder or even the chairman or members of the union parishad to get involved in the proceedings. Darbar is summoned by any influential person if he finds any villages committing serious offences and violating the orders of the samaj. In such cases the people of weak group are highly affected by the verdict offering punishment as excommunication, caning and beating with a shoe. The following cases of *darbar* may reflect the amount of injustice and discrimination in judgement.

Case 1 : A *darbar* was held in the western neighbourhood. It was called by the *Imam* (religious personality who leads the prayer) of the mosque as token of protest against gross violation of religious values. Three women belonging to a poor family were charged with violating the parda system and the sanctity of seclusion. They were condemned as they dared to attend the jatra (opera) with a man. In the *darbar* the members of that poor family tried to defend the three women. They revealed that the wife of Javed Molla's eldest son was with them. Their allegation against this high status women came true for she herself confessed her offence. Surprisingly the poor women were given the punishment of social boycott. The wife of Javed Molla's eldest son was exempted from such punishment. She only paid taka five as punishment for the violation of religious values. The *Imam* of the mosque gave interpretation rationalising her offence and condemning the acts of the poor women.

The two cases to be described (case 2 & case 3) bear similarity to each other, because both involved violation of sexual norms. One case involved a small farmer and another an influential man.

Case 2 : One small farmer violated sexual norms. The *darbar* summoned by the village headman and attended by influentials came to the decision that the defaulter should marry the woman he had illegal physical contact (incest) with. As a penalty the accused had to throw a feast to appease the samaj people before he legalised the sexual relationship with that woman. This woman had been a maid servant rendering service in the house of a rich farmer.

Case 3 : Another case of illegal sexual contact between the second eldest son of Madari Shaikh and the young maid servant

serving in Madari Shaikh's family resulted in the meeting of the *darbar*. The court could not give the final decision because of the lobbying of the supporters of Madari Shaikh. The *darbar* adjourned and the trial was kept in abeyance in view of the impending tension. It failed to effect a compromise. Nor it could force the defaulter to marry the maid servant. The maid servant's relatives appealed for fair judgement. But the women was dismissed by Madari Shaikh and ostracised from the *samaj* for a long time.

So the dispute settling machinery sufficiently reveals the nature of domination; domination of the poor by the rich. The poor family considered to be of low class cannot influence this mechanism. The dominant family belonging to high class can manipulate the decision of the *darbar* and sometimes disregards its verdict if it does not suit the satisfaction of this family head. Land conflict among the interacting families sometimes involves the chairman in the *darbar*. The *darbar* in many cases gives out a temporary solution. On many occasions disagreement over the terms and conditions of settlement lead to higher court cases. The union *parishad* members from this village et up several examples of addressing the village court of the union parishad as advocates on behalf their clients and those of their factions. This facilitates favouritism and smooths the way to class domination in and outside the village.

Conclusion :

It follows that in the rural court, which has been accorded traditional prestige and status, class domination is preponderant over ethical consideration. The *pradhan* as the fountain head of justice appears to yield to group domination and thus encourages corruption and injustice. The amount of punishment meted out to the individuals belonging to the dominant class is less than in other cases. The tendency to muscle out the weaker group in the proceeding of *darbar* and to swindle the people of economically poor class in the judgement leaves little or no scope for justice

and equity. In this sense the darbar has become a vehicle for manipulation of the rural elites in favour of their own groups and factions. A similar finding about the rural judicial system has been observed by Ven Beurden and Arens (1977) who conducted rural study in a village which he named as *Jhagrapur*.⁸

The headman as a social guide or any appointed judge in some cases is expected to promote ethical methods of meting out even-handed justice to the people concerned. But the principle of impartiality is violated by the headman who tacitly favours a particular group, or by the imam or the religious leader who gives interpretations rationalising even gross misconduct and faults. Thus the presence of affluent elements as influential group in the *darbar* and their successful manipulation of the issue are injurious to the powerless group a phenomenon that strikes at the very concept of justice.

Notes and References :

1. Prof. B.K. Jahangir has offered a systematic presentation about values and norms in the peasant society absolutely dominated by class structure. For details see B.K. Jahangir, *Rural Society, Power Structure and Class Practice* (Dhaka, Centre for Social Studies, 1982), p. 16.
2. Rex has termed conflict as 'breakdown of normative order'. Conflict resolution machinery serves to prevent conflict from growing worse and creating tense situation. For details see John Rex, *Conflict : Conceptual and theoretical Analysis* (London. 1981).
3. Wood spoke of social units that we operative units of integration in peasant society such as household, homestead, and samaj (Community). For details see G.D. Wood "The political proceas in Bangladesh-A Research Note" in Ameerul Huq. ed. *Exploitation and the Rural Poor-*

A Working Paper on the Rural Power Structure (Comilla, BARD, 1978), p. 19.

4. B.K. Jahangir has made a lucid analysis of the social relations of production in the exploitative form of social organisation functional in the peasant communities. He presented a live picture of society and social system with its inherent contradictions creating a condition of confrontation between the opposing ideological forces. For details see, B.K. Jahangir, *Differentiation, polarisation and confrontation in Rural Bangladesh* (Dhaka, Centre for Social Studies, 1974).
5. For proper understanding of participation in rural social milieu see Tipu Sultan, *Government and Citizens in Politics and Development-An Asian Case* (Comilla, BARD, 1978), p. 102.
6. Md. Moksudur Rahman, "A Study of Two Village Courts," *The Journal of Local Government*, Vol. 14, no. 2 (1985), p. 176.
7. *Ibid*, p. 175-176.
8. Yos Van Beurden and Y. Arens, *Jhagrapur* (Amsterdam, 1977).

CANAL DIGGING PROGRAMME IN BANGLADESH: A STUDY ON ITS ACHIEVEMENTS AND CONSTRAINTS

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SUMMARY

Government of Bangladesh has launched the Canal digging programme against a widespread concern over a perceived threat to the ecological balance of the country caused by a rapid deterioration in the river system with its concomitant effects on the agriculture. In the present article an attempt has been made to assess the performance of the programme and its effects on some selected areas on the basis of the findings of a recent evaluation. The study reveals many interesting findings which are mixed with both success and challenges. There are several anomalies in respect of planning and implementation of the programme. The idea of local level participation in this respect is not fully internalized in the programme. Likewise, implementation is done disregarding many technical details as outlined in the approved schemes or plan. People's participation in terms of voluntary labour is interspersed with some difficulties. But an important aspect of the programme is the participation of women in the excavation work. Though their participation is very low compared to males, their contribution to a hard menial job like earthwork is a praiseworthy event. Besides, the study shows that the canal digging programme has made some headway in the fields of irrigation, agriculture, fishery and environment. It has also achieved a significant result in the drainage of stagnant water in the project areas and this, in turn, has helped in reclamation of a large area of land for the purpose of cultivation. However, the programme is fraught with multifarious difficulties which may be classified into several categories: technical, economic, social and administrative. The study points out that the success of the programme is heavily contingent upon the successful management of those problems. For this purpose, the programme may be recast in the light of the present situation in order to give it a new lease of life. So a few tentative measures have been suggested to improve the situation.

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INTRODUCTION

Backdrop of the Programme

Bangladesh having a flat deltaic area of about 35 million acres has been formed at the confluence of three mighty river system: the Brahmaputra-Jamuna, the Ganges-Padma and the Meghna. These big rivers are interlaced with hundreds of small rivers and canals. But this river system has deteriorated sharply in recent decades, causing an alarming threat to the ecological balance of Bangladesh. More specifically speaking, a severe threat to agriculture has loomed large out of this rapid deterioration in the river system. Out of this realisation, government of Bangladesh launched a canal digging programme in the late 1970s under the leadership of the late President Ziaur Rahman. However, this programme discontinued after the advent of the Ershad administration in the early 1980s. The government under the leadership of the Prime Minister Begum Khalada Zia renewed the canal digging programme with new zeal and vigour in order to attain the following objectives:¹

- i) Excavation of the derelict rivers, canals and ponds to streamline the irrigation facilities enhancing the use of surface water;
- ii) Draining out the stagnant water from the crop land;
- iii) Construction of roads along the excavated canals and plantation of trees on those roads; and
- iv) Cultivation of fish in the lake water.

The ultimate goal of this programme is to attain self-sufficiency in food by way of increase in production of

agriculture. All these ideas have provided the backdrop for the canal digging programme. In pursuit of its stipulated objectives, three types of projects- excavation of canals, re-excavation of derelict tanks and construction of embankment- are subsumed under the programme. A collateral component of the programme is the construction of water control structures intending to facilitate the effectiveness of the canals in achieving the desired goals. The programme puts a major thrust on the mobilisation of voluntary labour to cover the 25% of the total earthwork for all the projects under it. The rest of the project cost is met by the government allocating the food crops for each project. Under the programme the present ratio of government grant to voluntary labour is 3:1.²

Statement of the Problem

Now that the canal digging programme has passed through a good deal of time amounting to more than three years and hundreds of projects have been completed over this long period of the time. It is believed that the programme through its completed projects has achieved many positive results on the socio-economic fronts. However, annual review of the programme as published in the government documents suggests that though the programme has gone a long way in improving the irrigation and drainage system, its success is far below the targets³. Likewise, an evaluation done by the Implementation, Monitoring and Evaluation Department (IMED), Ministry of Planning, shows several weak points of the programme. Achievement of the programme as against the target is not up to the mark⁴. But this evaluation has focussed on the performance of the first year (1991-92) only. After that more than two years have elapsed since the completion of the IMED evaluation and by this time many changes have taken place in the field in respect of the programme. In consideration of this fact, an evaluation was

conducted in 1995 to assess the performance of the programme and its overall impact on the socio-economic fields.

Objectives of the Evaluation

The specific objectives were as follows:

- i) To see whether the excavation of the canals has been done as per specification;
- ii) To assess the effectiveness of the programme in terms of irrigation, production, employment, water holding capacity and afforestation;
- iii) To determine the nature and causes of problems; and
- iv) To suggest measures for further improvement of the programme.

Scope Of The Evaluation

The evaluation broadly concentrates on the performance of the programme in eight areas : (i) Planning and implementation procedures of the programme; (ii) People's participation in the programme; (iii) Production of agricultural crops; (iv) Fish production; (v) Social Forestry; (vi) Organisation and management of the completed projects; (vii) Sustainability of the programme from technical and managerial perspectives; (viii) Environmental effect on agriculture and fish.

Methodology

The study was conducted in 16 districts of Rajshahi division. In view of the largeness of the programme and the other resource constraints, fieldwork of the study was confined to few selected projects as implemented in the year of 1993-94 only. In the said financial year, a total of 32 projects were implemented in different districts of Rajshahi division. Apart from that, over the last 4 years a total of 20 water control structures have been constructed. For the purpose of data collection, 18 canals including 2 ponds were selected as sample through a random

choice covering both completed and incomplete projects. Though the study revolves round the sample canals to examine the effectiveness of the programme, 10 water control structures were also randomly selected to give some sidelights on their role in streamlining the operation of the programme for achieving the desired goals.

In the present study survey method was mainly applied for data collection from various sources. The survey method was done in two ways: (a) Examination of several secondary materials such as government documents, minutes of the meetings of the various committees and Government Circulars; and (b) Interview of the Government officials, public leaders and a wide range of beneficiaries. Data were collected from six categories of people of all the sample project areas mainly through interview with structured questionnaire. Categories of respondents were (i) Members of Project Implementation Committee, (ii) Thana Engineer; (iii) Thana Agriculture Officer; (iv) Thana fishery Officer; (v) Beneficiary farmers; and (vi) Beneficiary fishermen. Apart from the interview with these categories of people, an attempt was made to discuss with the concerned Deputy Commissioners, Executive Engineers of Local Government Engineering Department, Thana Nirbahi Officers and the relevant officials of BRDB in order to exchange views on the effectiveness of planning and implementation procedures of the canal digging programme as well as its effectiveness in terms of production and employment. On top of that, some of the information were examined through field visit to the project sites.

PLANNING AND IMPLEMENTATION

This section covers five issues relating to planning and implementation: (i) theoretical aspect of planning and implementation procedures; (ii) local level participation in planning and implementation of the programme; (iii) implementation of the programme compared to the specifications as outlined in the plan; (iv) participation of women in canal

digging; and (v) nature of problems that impede the normal process of implementation.

Planning and Implementation Procedures

There exist as many as seven committees at various levels beginning from the centre down to the Union. The central responsibility of all these committees is to facilitate the planning and implementation of the project activities under the programme. Apart from all these committees, there obtains another committee called "Management and Maintenance Committee" in each project site for ensuring regular maintenance of the completed project.⁵

As regards planning, there exists a long chain of procedures. As a matter of fact, planning process starts from the union level. At the Union level, there is a Union committee which selects projects from the concerned Union and submits them to the District Committee through the Thana Committee. At the thana level, Thana Engineer, subject to the approval of the Thana Committee, prepares the schemes with detailed estimates following the prescribed Project Proforma and forwards them to the district Committee. At the District level there is a technical committee which would examine the technical viability of each project. Then the district committee approves those projects which are found technically suitable and refers them together with its recommendations to the "Canal Digging Cell" at the Prime Minister's Secretariat. Then the projects are approved after their verification from the technical perspectives. Accordingly, an office order is issued, allocating food crops in favour of the approved projects. Then the Ministry of Relief issues Government Order (G.O) for food crops in favour of the concerned District Committee. Therefrom allocation is channelled to the Union Committee through the concerned Thana committee and the ultimate work begins after the availability of the allocation of food crops. Even a cursory look at the committee system beginning from the centre down to the Union suggests that planning and implementation procedures are clearly spelled out. Besides, the programme inheres a clear system of post-project maintenance.⁶

Local Level Participation in Planning and Implementation

Discussion in this section concentrates on the actual situation in respect of local level participation in planning and implementation of the programme. As regards planning, there exists a long chain of procedures ranging from Union to the centre. Theoretically, the concerned Union Parishads are to select the projects in consultation with the local people of their respective Unions. But it appears from the field observation that in reality this seldom works. By and large, programme is mostly imposed from above without reflecting the people's demands. Moreover, in many cases local politics gets precedence over the technical justification in respect of selecting the projects. Besides, though there is provision for examination of all the projects from technical perspectives by technical committees at the thana and district levels, it is not done properly due to lack of sufficient time. As most of the projects were selected very hurriedly, the concerned committees could not manage enough time to examine the matters in details. As a consequence, many projects are riddled with technical faults.

In order to know the status of the local level participation in planning and implementation of the programme an opinion survey was conducted among three categories of people in the project areas. They were: 170 beneficiary farmers of the sample project areas; PIC Members; and 54 thana level officials of the departments of Agriculture, Fishery and Bangladesh Rural Development Board. Findings of the opinion survey evince that majority of the farmers (55%) are not aware of the project selection in their respective areas. The rest (45%), albeit aware of the projects, are not involved in the selection of the projects. In the opinion of the farmers, project selection is mostly done by the UP Chairmen and Members and Thana Nirbahi Officers. In some cases it is decided by the district administration and Thana Engineer. The opinions of the PIC Members, by contrast, suggest that 94% of the projects are selected by the concerned Union

Parishads in consultation with local people reflecting their demands. Besides, the local people took part in the implementation of the 94% of the projects. An examination of the findings of the survey reveals two different versions on the subject. However, the officials views confirm the statement of the local people and this, if taken true, implies that local level participation is very poor in planning and implementation process of the programme. In the opinion of the officials (72%) they have no participation in planning and implementation of the projects. Though the rest (28%) are consulted, their views are hardly taken into account. Apart from this, in the opinion of 94% officials, the relevant departments are not assigned with any specific job in order to streamline the development efforts of the programme after the excavation of the canals.

Implementation of the Programme

This part of discussion deals with implementation of the programme in the light of five major points: achievement of targets in earthwork; voluntary labour; utilisation of wheat; observance of certain technical formalities; and supervision the work. Implementation of the programme is also fraught with many defects. It is seen that in most of the sample projects (83%) excavation work covered the targeted length. However, most of the projects could not achieve the desired targets with respect to the earthwork under Food for Works and voluntary labour. Besides, in all the projects there has been some delay in observance of the necessary formalities in several stages beginning from planning to their completion. Anyway all the completed Project were implemented on time except for the incomplete ones. Major stages of this delay as stated by the members of the project Implementation Committee (PIC) and the officials of the Local Government Engineering Department (LGED) were: (a) selection of projects by the concerned Union Parishads; (b) allocation of wheat; (c) start of the work; and (d) issuing the Government Order (GO) for the delivery of wheat by

the Ministry of Relief. The other factors that compounded such delay were: (a) complication in the formation of PIC due to internal conflicts among the UP chairmen and members; (b) diversion to the main course of the canal after the scheme was approved; (c) lack of labour; and so on. All these reportedly acted as deterrent to the normal process of implementation. But in most of the cases (72%), delay in the selection of the projects by the UP and lack of timely allocation of wheat caused inconvenience to the normal process of implementation (See Table-1). It is important to note that all the steps beginning from planning to implementation are so closely related that any delay in one stage affects all other subsequent stages like a row of dominoes.

An examination of the allocation of wheat and its utilisation under the programme shows that in all the sample projects allocation of wheat was done as per requirements shown in the estimates. But the total allocation of wheat could not be utilised. Only 81% of the total allocation had been spent. The same thing also happened to the utilisation of the cash (See Table-2). Three factors can be attributed to unutilisation of the total allocation of wheat and fund. First, out of 18 sample projects 12 remained partly incomplete and as such the whole allocation could not be spent. Second, as the starting of the excavation work for several projects was belated, it continued even beyond the approved time schedule of the projects. As a result, those projects faced some bottlenecks caused by early flood and some other natural disaster forcing the PIC not to draw the allotted wheat and money of the last quarter.

As regards the observance of some technical formalities and the government instructions, excavation work of all the projects was reportedly done in compliance with all the specifications of the schemes. In the opinion of the local people (72%), the quality of the work was up to the mark. However, field observation gives a different picture. As for instance, the provision of barm- a vital

component of a canal- was not maintained properly for any of the sample projects and this one may be identified as a major technical fault of the projects under the programme.

Out of 18 sample projects, voluntary labour was made available in the case of 14 (78%) projects. Again, 24% of the total earthwork had been achieved through voluntary labour (See Table-3). It is seen that four categories of people took part in the earthwork by way of voluntary labour. They were: students and youth, beneficiary people and Ansars and members of VDP. Concerned Deputy Commissioners and Thana Nirbahi Officers made contact with educational institutions and Government offices in their attempts for motivating the local people through public meeting in cooperation with the Union Parishad Chairmen. Though information as collected from the PIC and LGED gave a positive picture in respect of the quality of work done by the voluntary labour, direct discussion with the local people during the field investigation evinced a completely different picture. Voluntary labour was not spontaneous. Local people were pressurised into giving voluntary labour and they did not work sincerely. As a consequence, quality of earthwork was not up to the mark. Major portion of voluntary labour was realised from the students by creating pressure on the authorities of the educational institutions (See Table-4).

As regards the supervision and administrative initiative at the local level, it is found that both the officials and the public representatives were active at the time of implementing the projects. However, TNO and Thana Assistant Engineer of the LGED played a leading role in this respect. By comparison with them, the role of others was tenuous (See Table-5).

Participation of Women in Canal digging

Females along with the males also took part in the earthwork of the programme in two ways- earthwork under Food for Works and earthwork through voluntary labour. As for the earthwork under Food for Works, a total of 11,250 mandays

were targeted for Women and the actual achievement was 100%. However, by comparison with the males, the position of females in respect of employment was very insignificant. Under the food for Works, the targeted ratio of male to female in respect of employment in earthwork was 73:1 and the achievement was 68:1. Likewise, women also contributed to the earthwork in the form of voluntary labour. In the case of voluntary labour targeted mandays for the females were 7050 and the rate of achievement was 100%. Women participation in this case too was very low compared to that of males. Poor participation of female as against the male may be ascribed to socio-economic constraints, environment of the society and the nature of work. In spite of all these limitations, it is encouraging that women took part in a hard menial job like earthwork along with the males. This participation of the females is undoubtedly an important event for the canal digging programme (See Table-6).

Impediments to Implementation of the Projects

An attempt was made to know the nature of problems that impeded the implementation process of the projects under the canal digging programme. In the words of the Project Implementation Committee (PIC) and the officials of the Local Government Engineering Department, there lay seven types of problems that hindered the smooth operation of the programme. These were: (i) lack of sufficient initiative in motivating the local people for voluntary labour; (ii) insufficiency in voluntary labour and its inferiority in quality; (iii) poor wages for the labourers compared to the nature and volume of work, (iv) technically faulty projects; (v) conflict with the local people in respect of land acquisition; (vi) lack of clarity about the role of field administration (TNO) in the programme implementation; (vii) lack of adequate depth in the excavated canal for preservation of water; (viii) domination of local politics over the selection of the projects; and (ix) social harassment by local 'mastans'* who tried to collect money from the Project Committee Chairman by extortion. In

case they refuse to pay the money, the '*mastans*'* harassed them in different ways.

As for the obstacles to the implementation of the programme, an attempt was also made to seek the views of the different officials working in the thana and district including the Deputy Commissioner and the TNO. Here a summarised version of their views is presented to get an insight into the problems in this regard.

- (i) Lack of voluntary labour : As the majority of the people are very poor, they are disinclined to work without any wage;
- (ii) Moreover, the quality of work through voluntary labour is not good;
- (iii) Excavation work was fraught with legal complication in the absence of any provision for land acquisition;
- (iv) Wage rate in terms of wheat as earmarked for earthwork is very low compared to the current rate for the similar nature of work in the market. As a result, labour is not spontaneously available in many cases;
- (v) In many cases local politics gets precedence over the technical justification in selecting the projects;
- (vi) Sometimes programme is imposed from the above and as a consequence it becomes difficult to achieve the desired goal of the programme.
- (vii) In several cases the depth of the canal is less than that of the connecting river- i.e. the main source of water for the canal. Even water which comes in the rainy season cannot be preserved and it flows out in the dry season;
- (viii) Corruption in the delivery of wheat and its subsequent distribution;
- (ix) Conflicts among the members of the project committee; and
- (x) There is no mechanism for checking the authority of the PIC members in the event of any violation of rules by them.

The world mastan is a colloquial Bangla expression of recent origin and the corresponding meaning of it in English is terrorist.

An analysis of the problems as emerged from the opinions of various groups of officials suggests that they are apparently same in nature and dimension. The concerned officials also put forward several remedies in the form of suggestions purporting to overcome the existing problems. (i) The idea of voluntary labour should be withered away. Instead, the whole work should be done with the help of wheat under food for Works; (ii) Acquisition of land adjacent to the canal should be done well ahead of the excavation work; (iii) Wage rate for the labourers as paid through wheat should be increased; (iv) Government should have a long-term plan regarding the selection of the canals. For this purpose, a survey is to be done by a technical committee at the local level and then the selected projects of each locality may be subsumed under a Five Year Plan after a threadbare discussion at the national level. (v) Instead of PIC, the responsibility for earthwork may be given to contractor to be selected through tender; (b) In place of wheat, wages for the labourers should be paid in cash. (vii) Political influence should be prevented in order to ensure the right selection of the projects and more importance is to be attached to the technical significance.

EFFECTIVENESS OF THE PROGRAMME

This study has tried to assess the effectiveness of the programme in the light of its operation in five vital areas: irrigation, production in agriculture, fish cultivation, afforestation and environmental effect in the fields of agriculture and fish culture. Here an attempt has been made to present the findings in summarised form.

Irrigation

Effectiveness of the programme in terms of irrigation is heavily contingent upon the availability of water in the excavated canals. Though there are some inconsistencies and contradictions in the data collected from different sources, these is sufficient evidence indicating the lack of proper link with its

main source of water. As a result, water is not available in the dry season (Table-7 (a)). Aside from that, there are several canals which claimed the availability of water, but the field observation indicates a very different picture. In fact, those canals contain water in some of its large ditches only and by the availability of water in the dry season the local people meant those places. In spite of all these limitations, it is in evidence that seven projects (39%) were partially active in respect of irrigation and some areas of one project had been covered under Low Lift Pumps (LLP). Prior to the excavation work, a total of 360 acres were covered under irrigation in the project areas and it increased to 775 acres following the excavation of the canals. The rate of increase was 115% (see Table-7 (b)).

Agricultural Production

The canal digging programme has some positive impact on the increases of yield in agriculture. An examination of the data on the agricultural production over the last four years as collected from the project thanas as well as from the sample projects shows a clear trend of increase in production (See Table-8). Canal digging programme played a positive role in the increase of production in agriculture mainly in two ways. First, it has enhanced the drainage facilities to a great extent and this in turn has been found helpful for reclamation of a large area of land under cultivation which previously remained idle because of water logging. Second, by comparison with the past, irrigation facilities have gone up to some extent as a result of canal digging. This accounts for a good deal of increase in production. However, the contribution of drainage is more than that of irrigation in this respect. But nevertheless, in several areas constraints on the increase of agricultural production were in evidence and they are ascribed to three reasons. First, sufficient water is not available for the purpose of irrigation. Second, in some cases the contribution of canal is very minimal in respect of productive work. Third, the connecting rivers- the main sources of water- do not have enough water in the dry seasons.

Fish Cultivation

Data as available from the various sources suggest that the programme achieved a positive influence on the production of fish in the project areas. It is evident from the examination of the records on fish production over a period of the last four years that there has been a gradual increase in fish production of the concerned thanas. It is also found that prior to the excavation of canals total production of the sample project areas under study was 152.07 tonnes and it stood to 220.25 tonnes because of regular increase in fish production (see Table-9 (a)). Besides, 32% of the fishermen of the sample project areas reported about an increase in their employment. Moreover, there existed organisational efforts with respect to the cultivation and collection of fish in 5 (28%) projects (see Table-9(b)). However, the achievement of the excavated canals in respect of fish production was not up to the mark due to several hindrances. First, in the dry season the canals do not have enough water for fish. Second, cultivation of fish and its catching are done in a very unplanned manner. Third, the registered fishermen cannot participate in fish production due to their financial insolvency and inexperience. Fourth, in many cases the canals are not suitable enough to cultivate fish in the absence of sufficient depth of water. Fifth, there is a lack of sufficient initiative for fish cultivation on the part of Government and the concerned individuals as well. Sixth, as there is no enclosure on the main opening of the canals where they are connected with the rivers, all the fish move away along with the current of the canal during the rainy season. Seventh, local people are involved in reckless catching of fish leading to the decimation of fingerlings and brood fish. Finally, there exists faulty management in respect of leasing the water bodies. In several cases, lease is given to the rich people rather than the registered fisherman or the poorer section of the community.

Aforestation

One of the major components of the canal digging programme was plantation of trees on the road to be constructed with the soil lifted from the canal's bed as a result of the earthwork. Out of 18 sample projects, only 6 (33%) had got roads and of them, 4 (22%) had been planted with trees. It is seen from practical observation that around 20,000 saplings of different species were planted of which only 18,000 have survived. Majority of the trees as planted along the roadside belong to 'shishu', Mahogany, 'Karoi' Ipil Ipil and so on. Growth of those trees is quite satisfactory. As regards the non-existence of trees in other project areas, four factors may be ascribed to it. First, as the lifted soil from the canal bed was placed right and left on the bank without levelling them, the canal bank was not found suitable for tree plantation. Second, concerned Union Parishad was found negligent in undertaking any effective measure for plantation of trees. Third, there did not exist any committee at the union level in order to ensure the regular maintenance of the programme. Fourth, post-project visit to the project areas by the government officials and the national level leaders appears to be completely absent. As a consequence, many important components like tree plantation is not in evidence in the case of most of the projects.

Environment and Canal Digging Programme

The study tried to collect limited information on selected areas intending to give some sidelights on the environmental effects of the programme. Canal digging programme has been able to create a limited positive impact on the environment in respect of agriculture and fishery and there has been no report on any environmental damage in this regard. A positive effect has been apparent in 33% projects in the field of agriculture. As a result, there has been an increase in the cattle feed (straw) in those areas. Aside from that, excavation of canals has resulted in the current of water in 11 (61%) project areas during the rainy

season (see Table-10 (a)). In 3 (17%) project areas there has been a positive environmental impact on fisheries as well. Besides, in six projects (33%) excavation of canals has spurred the incoming of natural fish in the project areas. However, there has been reports from the Thana Fishery Officers that in four projects (22%) there has been reportedly a sort of decrease in fish production. There were many old and large ditches in the canal bed and water bodies which could sustain enough water throughout the year and this was very congenial for fish production. But those water bodies had been silted up at the time of earthwork in order to level the bottom of the canal. As a result, the scope of fish production and fishing has been narrowed down during the dry season. Aside from that, in some project areas (17%) the fishermen were in dispute with the farmers regarding fish production and their subsequent catching (See Table-10(b)).

ROLE OF WATER CONTROL STRUCTURES

A collateral component of canal digging programme is the construction of water control structures on the excavated canals in order to streamline the irrigation facilities in the project areas. As of today, a total of 81 Water control structures have been constructed under the programme. Of them, 20 structures have been built in different districts of Rajshahi Division. In all 10 water control structures were selected as sample to examine their performance as against the desired role in irrigation and agricultural production including the environmental effects on agriculture and fishery. The subsequent paragraphs are devoted to encapsulate the findings as available from the field survey.

Out of the 10 sample water control structures, 8 were completed and 2 were incomplete. It is seen from the available data that 7 (70%) projects were completed in due course and the rest three including one completed project were belated due to several reasons. Part of the reason was delay in observance of the essential formalities approval of the projects, preparation of the

tender and its subsequent floating, finalisation of the tenders and issuing the work order, and starting the work. The other reasons were failure of the contractors and natural disaster. It is important to note that all the implementation stages are interrelated and any inconvenience to one stage causes the smooth operation of all the subsequent stages. This situation is in evidence in respect of the construction of water control structures.

Construction of the water control structure has spurred to some extent the operation of the excavated canals in the field of irrigation. As a matter of fact, performance of the structure in the drainage of stagnant water is relatively high compared to irrigation. Water control structures have also led to the creation of current in 7 (70%) project canals during the rainy season. Apart from all these positive results, they have some positive influence on fish production together with an increase in employment opportunities. However, in one project area (10%) there has been report about the dispute between the two groups-farmers and fishermen-regarding fish production and its catching. This dispute is ascribed to their difference of interest. In spite of all these conflicting interests, the impact of water control structures is, by and large, a positive one. Another encouraging side of this programme is that construction of water control structures has gone a long way in improving the communication network in concerned project areas compared to the pre-project situation. But the achievements are not up to the mark as the programme is fraught with several constraints. In fact, effectiveness of the water control structures is heavily contingent upon favourable existence of certain conditions-proper linkage of the canals with main source of water -i.e. river; availability of water in the dry season, installation of Low Lift Pumps (LLPs) in the project areas; and organisational efforts for irrigation and fisheries and the like. But in most of the areas under the sample projects presence of all these conditions is very marginal (see Tables-11 (a) and 11 (b)).

OBSERVATIONS AND CONCLUSIONS

As evident from the discussion on the findings of the study, the programme has made some headway in the fields of irrigation, agriculture, fishery, forestry and environment. More specifically speaking, the programme has achieved a perceptible result in the drainage of stagnant water in the project areas which, in turn, has helped in reclamation of a large area of land for the purpose of cultivation. However, there is on scope for complacence, for there is many a slip between the cup and the lip as the programme is covered with a blanket of problems. The factors that created obstacles to the achievement of the desired goal can be classified into several categories: technical, economic, social, administrative and political.

The success of the canal digging programme is heavily contingent upon the availability of water in project areas and the orgainsational efforts. In most of the project areas there is a dearth of adequate water in the absence of proper linkage of the excavated canals with the main sources of water, i.e., the connecting rivers. As such linkage does not exist, possibility of water availability in the canals is very slim despite the present excavation work. Second, in many cases, the excavated canals are not deep enough to sustain water. That is, many canals have not excavated in the right manner. Third, excavation work has not been done conforming to all the technical requirements as shown in the project documents. Apparently excavation work is right but there have been observed technical faults with many projects. As for instance, not a single project under study has maintained the barm according to original plan and this has been identified as a major technical fault of the sample projects. As a result, the top soil from the bank is highly vulnerable to erosion leading to the siltation of the canals bed as soon as the rain begins during the rainy season. Fourth, as the elevated soil on the bank has not been levelled properly, there does not exist any road in most of the canal side and this has narrowed down

the likelihood of afforestation in the project areas. Fifth, the excavation work done through voluntary labour was poor in quality. The hard reality is that voluntary labour was not available in true sense of the term. As the majority of the people are very poor, they are disinclined to work without wage. Though in most cases voluntary labour has been shown in paper just to confirm the compliance of the PIC with the requisite formalities as set forth in the project document, in reality voluntary labour was a far cry from the expectation of its advocates. Sixth, even the earthwork through wheat was not achieved properly. Though in paper it is claimed that everything is fine, there are a lot of anomalies in this regard. Part of the reason is the low wage rate for earthwork compared to the current rate for similar nature of work in the market. As a result, labour is not spontaneously available in many cases. This situation can largely be attributed to the negligence of the PIC and the concerned officials of the local administration. In many cases, PIC members and the implementing agencies are subjected to harassment because of the ill-motive of the concerned officials of the local administration and the fluidity in the society leading to wastage, misuse and inefficient utilisation of wheat and money under the programme. Seventh, after the excavation work is over a severe lack of organisational efforts with respect to agriculture, irrigation, fishery and afforestation is in evidence and this has undermined the effectiveness of the excavated canals. Eighth, except for the water control structures, there is no arrangement for looking after the day-to-day management of the projects. Though the programme inheres provision of committee for maintenance, as of today, no committee has yet been formed for this purpose. Ninth, the concerned nation building departments and agencies have not preserved any reliable statistics on production of their respective sectors showing the pre- and post-project situation. In such a situation it has not been possible to assess the exact trend of change that has come into effect due to the programme. Finally, in many cases, local politics gets precedence over the

technical justification in selecting the projects. Programme is imposed from above disregarding the technical feasibility of the schemes and the needs of the local people as well. Besides, projects are selected very hurriedly on political grounds without giving sufficient time for their examination in details.

There has been a sharp decline in the flow of water in all the rivers and canals due to siltation of their beds with all its concomitant detrimental effects on the ecological balance of the country. Canal digging programme under the aegis of the government is a benevolent idea designed to protect the natural environment from the verge of ruin by way of rejuvenating the river network of the country. Viewed from this perspective, there is no alternative to the excavation work of the canals. It is true that initially implementation of the programme and the subsequent operation of the excavated canals to keep them alive for achieving the desired goals may come across many challenges. However, it must be borne in mind that there is no scope for overnight achievement of the desired goal. Instead, a good deal of time as gestation period must be allowed to reap the benefit from the programme. Moreover, instead of treating the programme as a sporadic effort, it should be regarded as a continuous process. Evidently success cannot be achieved in a single leap. Looked at from this standpoint, the programme may be looked upon as a good start. As the performance of the programme reflects a fragile situation, it should be recast in the light of the present situation in order to give it a new lease of life. In consideration of this fact, some tentative measures as recommended by the beneficiaries, the PIC members and the officials of the various nation building departments may be offered to overcome the present state of sluggishness in the programme.

- (i) *Proper Planning and Implementation:* Planning and implementation of project must be technically sound. It is

seen that in many cases local politics gets precedence over the technical importance in respect of the selection of the projects. Likewise, implementation of the projects is done disregarding the technical requirements of the projects. As a result projects not only fail to reflect the people's need but for a good measure they remain ineffective in showing any good results. In such a situation, selection of projects should be done taking cognisance of both people's need and their technical feasibility. To overcome this problem, government should have a long-term plan regarding the selection of the canals. For this purpose, a survey is to be done by a technical committee at the local level and then the selected projects of each locality may be subsumed under a Five Year Plan after a threadbare discussion at the national level. By the same token, implementation must be done in compliance with specifications as set forth in the plan. However, two preconditions are needed to ensure the process-protection of the officials against any political interference, harassment and extortion; and sincerity of the implementing agency in scanning the programme in details at the time of planning and its implementation as well.

- (ii) *Spelling out the Production Target of the Projects:* Thus far, the concerned nation building departments do not maintain any statistics for production in their respective fields highlighting the pre- and post-project situation. As for instance, Department of Agriculture, Department of Fishery, LGED and BRDB do not have any record on the development efforts. In most of the cases, they gave information on the basis of their assumption. Even in several cases they expressed their total ignorance about the existence of the projects. In such a situation, it is realised that the concerned departments should have a realistic target of development activities in their respective fields in order to streamline the effectiveness of the completed projects under the canal

digging programme. Aside from that, every concerned department should be assigned with some specific responsibilities relevant to its own field targeting on the development of the project areas. The proposed idea of target and specific responsibility for each department may become instrumental for monitoring the performance on regular basis. This, in turn, ensures the accountability of the relevant departments. Over and above, as a result of this system, departmental officials may remain careful about their responsibilities and their efforts would lead to the success of the programme in the light of the desired goal.

- (iii) *Some Modifications in the Voluntary Labour:* Though there is provision of voluntary labour for 25% of the total earthwork, achievement is very poor in this regard for various reasons. In consideration of this fact, many suggest the idea of complete abolition of such provision. In spite of that, it may not be wise to wipe out or waive the system in that the concept of people's participation would melt away from the programme, thus showing a major departure from the main concept. However, some further relaxation may be made reducing the present rate of voluntary labour. At the same time, efforts for voluntary labour may be strengthened to enhance the motivational efforts for achieving a meaningful participation of the local people by way of voluntary labour.
- iv) *Procedural Changes in Earthwork through Wheat:* The present system of earthwork through wheat appears to be riddled with several problems. First, nature of soil in different parts of the country is not same. It rather varies from place to place. For example, the soil of the Barind Tract is very hard and it requires relatively a hard labour compared to other areas of the country. For this reason, the labourers are disinclined to work in the existing rates of wages as paid in terms of wheat. Second, PIC does not work conforming to the estimates as shown in the scheme. A

trend of interest in having excess bill with less work appears to be strongly in evidence. Even they have a tendency to indulge in misappropriation of wheat. Third, as for any attempt for legal action against the members of PIC in the event of gross violation of project rules, they create pressure in the form of local influence on the officials. No wonder that it is not possible to take any legal action against any of their irregularities and corruption. Fourth, local 'mastans' try to get cash from the PIC by extortion. In case of any refusal by the Committee Chairman, he is subjected to harassment. Fifth, internal dispute among the PIC members causes a serious disservice to the smooth operation of the projects. Three measures may be adopted to overcome these problems. First, instead of getting work done through daily labour, it may be done through contract system. Second, wage rates of the labourers may be determined depending upon the nature of soil in different parts of the country. Third, an intensive supervision on the part of the district and thana level officials should be ensured at the time of project implementation, intending to enhance the quality of work and to check the corruption and wastage as well.

- (v) *Maintenance Programme for the Sustenance of the Projects:* In spite of the clear provision of maintenance committee under the leadership of the concerned Union Parishad, as of now no such initiative in this regard is in evidence. Besides, adequate financial provision for maintenance purpose is required. As the Union Parishad is severely constrained by financial insolvency in running its regular activities, it appears to be almost impossible on its part to ensure the maintenance of the projects under the canal digging programme without adequate financial help from the central government. Whereas, the desired goal of the projects is likely to be impaired in the absence of timely action for their maintenance. In view of this fact, administrative pressure

should be created to persuade the concerned Union Parishads to form the maintenance committee keeping in line with the project rules including the simultaneous confluence of adequate fund from the central government to ensure the proper maintenance.

- (vi) *Construction of Water Control Structures:* There should have provision for construction of water control structures both in the upstream and the downstream of the canals in order to preserve water after the rainy season. Apart from that, cross dam should be built on the canals if needed.
- (vii) *Indulgence in Corruption:* There is a common complaint that the weight of wheat as received from the godown is always found less than the stipulated quantity and this is due to the dishonesty of the persons responsible for the delivery of wheat from the godown. This problem eventually leads to the harassment of the PIC. This situation underlines the need for more vigilance of the concerned administration to keep the occurrence of such problem. If necessary, there may be a system of surprise visit to the godown at the time of drawing and delivery of wheat from there.
- (viii) *Quick Settlement of Land Dispute:* Technically excavation work of the canals has been found a faulty one in the absence of barm as per specification. Dispute with the owners of the land adjacent to the canals has been detected as one of the major obstacles to the proper maintenance of the barm. Moreover, such dispute accounts for a major deterrent to the normal process of programme implementation. In such a situation, full authority for quick solution to the dispute may be given to the field level officials of the concerned departments.
- (ix) *Inter-departmental Coordination:* There are inter-departmental committees at various levels for the purpose of proper selection of projects and their implementation. It

appears from the field visit that though committees are regular in their meetings, many officials express their total ignorance about the existence of the projects. This situation is mainly attributed to three reasons. First, despite the regularity in committee meetings, many officials neither attend the meeting on time nor they participate in the discussion. The present state of unhealthy relation between the members of administrative cadre and those of other cadres is regarded as the major factor behind this situation. Second, very often detailed discussion on the projects is not held. The Committee members leave the meeting shortly after signing the attendance register. Third, the concerned departments do not properly maintain the relevant papers regarding the committee meetings. So sometimes the officials are found to express the ignorance despite their departments' involvement in the programme. This situation underlines the need for bolstering supervision and monitoring from the top level so that inter-departmental coordination can be more effective. In pursuit of this, visit and inspection from the top is a must.

- (x) Finally, it may be pertinent to note that all the rivers flowing over Bangladesh originate from India. As India unilaterally uses the river water in many ways disregarding the genuine interest of Bangladesh, its river system is heading towards a disaster. No wonder that the problem of rapid deterioration in the river system of the country is closely related to the unilateral withdrawal of water from the major rivers by India for its internal consumption and as such, the present problem of Bangladesh cannot be singled out for solution. This underlines the need for regional cooperation between the two countries with a view to reaching a viable solution to the problem. Otherwise, mere effort through canal digging may only keep the lid on the crisis for now, but the fundamental problems are likely to continue to fester beneath the surface.

Table-1: Distribution of projects by delay at different stages

Causes of delay	No. of Projects	%
Selection of projects by the Union Parishads	13	72
Transmission of the project by the District Committee to the Central Cell	13	72
Issuing the Government Order (GO) for the allocation of wheat under FWP	11	61
Start of the work by the concerned Union Parishads	3	20
Negligence of the Project Implementation Committee (PIC)	1	6

Note: Total number of sample projects was 18 and percentage was calculated on the basis of the number of the total sample projects.

Table-2: Item-wise targets and achievement in respect of investment and employment in the excavation of canals

Heads/ items for investment and employment	Wheat/ Money		Mandays				Total	
	Planned/ Targeted	Actual	Male		Female		Target	Achievement
			Target	Achievement	Target	Achievement		
Earthwork (Tonnes)	4730.502	3815.685	828948	762672	11250	11250	840198	773922
Labour leaders for supervision (Tonnes)	75.462	75.202	38111	33250	N.A.	N.A.	38111	33250
Transport cost (cash in Tk)	N.A.	495070.17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Others (in Tk)	60077.00	46261.40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Total	-	-	867059	795922	11250	11250	878309	807172

Note: NA means not applicable.

Table-3: Amount of earthwork under FWP (wheat) and voluntary labour as received from different sources

Sources of information	Total earthwork (CFT)	Earthwork under wheat (CFT)	Earthwork under Voluntary labour (CFT)	Rate of voluntary labour %
Prime Minister's Secretariat	2509678.634	1907284.275	602394.359	24.00
Thana Engineer (LGED)	2518941.732	1896463.806	622477.926	24.71
Difference between Prime Minister's Secretariat and Thana Engineer (LGED)	9263.98	-10820.469	20083.567	-
Rate of difference	+0.37	-0.57	+3.33	-

Table-4: Categories of Participants in voluntary labour

Categories of Participants	No. of Projects	%
Students and Youth	15	83
Beneficiary local people	14	78
Ansars and members of Village Defence Party	9	50
Labour	7	39

Note: Total number of sample projects was 18 and percentage was calculated on the basis of the total number of sample projects.

Table-5: Status of Visit to the project sites by the public representatives and the government officials

Categories of Visitors	Total no of visits	Average visit	No. of projects not visited
Thana Engineer	148	8.22	-
Thana Nirbahi Officer	68	3.78	-
Deputy Commissioner	32	1.78	1
*Public Representatives	11	0.61	7

*By public representative it is meant for Ministers and Members of the Parliament (MP).

Table-6: Participation of male and female in earthwork under different methods

EarthWork under different methods	Male			Female			Total		
	Target	Achievement	Rate of Achievement(%)	Target	Achievement	Rate of Achievement(%)	Target	Achievement	Rate of Achievement(%)
Earthwork through wheat	828948	762672	92.00	11250	11250	100	840198	773922	92.11
Earthwork through voluntary labour	137538	137530	99.99	7050	7050	100	144588	144580	99.99
Total	966486	900202	93.14	18300	18300	100	948786	918502	96.81

Table-7(a): Opinion of the officials of various departments about the effectiveness of the canals in terms of water availability

Opinion of the officials	No. of respondents		
	Thana Engineers	Thana Agriculture Officer	Thana Fishery Officer
Well connected with the main source of water round the year	N.A.	5	4
Availability of water in the canals prior to their excavation	5	3	2
Existence of current in water in the canals in the rainy season.	N.A.	11	11

Note: 1. Total number of sample projects was 18 each having one respondent from all categories of officials.
2. NA means not available.

Table-7(b): Opinion of the agriculture officer about the effectiveness of the canals in terms of irrigation

Opinions	Previous	Present	Changes(%)
Number of LLPs	5	18	260
Area of coverage under irrigation (in acres)	360.00	775.00	115

Table-8: Year-wise production picture of agricultural crops in project thanas and project areas

Year	Total production of project thanas (in tonnes)	Rate of increase in growth as against the previous year (%)	Total production of the project areas	Rate of increase in growth as against the previous years (%)
1991	20, 72, 148	N.A.	N.A.	N.A.
1992	23, 22, 375	12.06	N.A.	N.A.
1993	24, 35, 811	4.88	N.A.	N.A.
1994	24, 98, 385	2.57	*2, 135	74.14

Note: *Information was available from the three project areas only.
NA means not available.

Table-9(a): Year-wise production of fish in the project thanas and the project areas

Year	Total production of fish in project thanas (in tonnes)	Rate of increase in growth as against the previous year (%)	Total production of fish in the project areas	Rate of increase in growth as against the previous years (%)
1991	10, 794.00	N.A.	N.A.	N.A.
1992	11, 348.50	5.14	N.A.	N.A.
1993	12, 212.60	7.61	*152.07	N.A.
1994	13, 016.05	6.58	*220.25	44.80

Note: *Figures have covered the data on six project areas.
NA means not available.

Table-9(b): Opinion of the Thana Fishery Officers about the effectiveness of the canals in terms of fish cultivation

Opinions	No. of Projects	%
Effective in fish cultivation	1	6
Increase in fish cultivation in the surrounding areas	1	6
Decline in fish cultivation in the surrounding areas	2	11
No change in fish cultivation	15	83
Existence of organisational efforts for fish cultivation	5	28

Note: Total number of sample projects was 18.

Table-10(a): Opinion of the Thana Agriculture Officers about the agricultural environment

Opinions	No. of Projects	%
Changes in the cropping pattern	6	33
Increase in fodder (straw)	6	33
No change in natural cattle feed (grass)	16	89
No damage in the trees	18	100

Note: Total number of project was 18.

Table-10(b): Opinion of the Thana Fishery Officers about the fishery environment

Opinions	No. of Projects	%
Changes in the species of fish	3	17
Positive impact on the coming of natural fish	6	33
Decline in the natural water bodies of fish	4	22
Dispute between farmers and fishermen in respect of fish cultivation	3	17
No influence on the coming of natural fish	10	56

Note: Total number of project was 18.

Table-11(a): Opinion of the officials about the effectiveness of the water control structure in respect of water availability

Opinion of the officials	No. of respondents		
	Thana Engineer	Thana Agriculture Officer	Thana Fishery Officer
Connected with the main sources of water	N.A.	3	N.A.
Absence of linkage with the main sources of water	N.A.	7	10
Availability of water in the canals during the dry season	6	1	N.A.
Presence of current in water in the canals	N.A.	6	7

Note: 1. Total number of sample projects was ten each having one respondent from all categories of officials.
2: NA means not available

Table-11(b): Opinion of the Agriculture officer about effectiveness of water control structure in respect of irrigation

Opinions	No. of projects		
	Previous	Present	Changes(%)
Availability of water in the canals	1	1	0
Number of LLPs	6	14	133
Irrigation coverage (acres)	342	4375	1179

References

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EFFECT OF WATER LOGGING ON THE COASTAL ENVIRONMENT OF BANGLADESH : A case Study

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INTRODUCTION

Beel Dakatia is one of the very large saucer like water bodies of the coastal area of Bangladesh. It is located in the south western region of the country, covering a gross area of 11,609 hectare. Before 1960 this Beel area used to drained out through the Hamkura and Upper Solmari rivers. The Majority of the Beel area was under cultivation. However, the area was susceptible to flooding through monsoon rain and intrusion of tidal saline water through these channels. The flood and tidal saline water used to cause severe damage to the crops (mostly paddy) of this area.

In the early 1960s in order to protect the coastal areas including these Beels from intrusion of saline water the then government conceived a Coastal Embankment Project (CEP) as a part of Green Revolution program. The then Water and Power Development Authority (WAPDA) constructed a network of embankments forming polders that provided protection from daily tidal inundation by saline water and from peak seasonal or storm flood levels. This project allowed the coastal land to be more intensively developed for agriculture purposes and agricultural production increased significantly for 10-15 years. Crops were so plentiful that the area came to be known locally as the 'granary of Khulna'.

Beel Dakatia, one of the Beels of the coastal area was empoldered by the polder number 25 under CEP to save it from both sweet and saline water. This polder was given three

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regulators, two were discharging into the Hamkura and one into upper Solmari rivers. The project was very successful in the first decade i.e. upto the end of the 1970s and cropping intensity increased remarkably.

But after that the drainage became a problem because of elevation of the river gradient due to heavy siltation on the downstream. The drainage outlets as well as the sluice gates have gradually blocked by heavy siltation due to reduced volume of upstream water and decrease the speed of water flow in the adjacent rivers as the constructed embankments obstructed the tidal volume flowing in and out of the polder areas.

The accumulated rain water of the catchment area of the Beel Dakatia could not get the outlet. On the other hand the yearly monsoonal rain aided in increasing the extent of inundation. As a result water logging spreaded gradually, the area under permanent flooding has been increasing remarkably since early 1980s. Local people suffered for a decade and waited for the Government to find some solution for them. They were particularly frastrated by the prolonged flooding and the continued deterioration in the quality of the stagnant water trapped in the polder. Finally in 1990 they made four cuts in the embankments as they perceived cutting to allow tidal circulation as a way to reduce the water level and improve water quality. Furthermore, oweners of low-lying lands near where the cuts were made saw an opportunity to encourage sediment deposition on their lands, thereby raising the land level. However, the cuts in the embankments have aggravated flooding and salinity intrusion within the polder, expanded the inundated area. As a result the sweet stagnant water turned into saline and consequently leaded to an environmental disaster for the Beel Dakatia area.

The objective of the present study is to highlight the impact of water logging in the coastal environment of that area. It also aims to asses the impact of water logging on the environment by identifying the effect on the physiographic, demographic, social and agricultural condition of the catchment area of Beel Dakatia area.

DATA AND METHODOLOGY

The data are primarily based on field investigation conducted in 1992. Stratified random sampling method has been followed to identify the samples for the household survey. Stratification has been done on the basis of topography (flooded and flood free area) as well as land holdings (landless, owning small, medium and large farms). Some secondary sources including HASKONING, BWDB, SPARSO, BBS, Thana Agriculture and Livestock office and other published and unpublished reports also supplemented data for this study.

The analysis is done in three different ways. The physiographic changes due to water logging has been identified by physical investigation, analysing maps, satellite imageries and as well as by using comments of the local people. Change of demographic as well as socio-economic characters have been analyzed in relation to the change of physiographic condition in last three decades. Finally, Agricultural practices, cropping patterns and problems faced by the farmers of this area are identified.

STUDY AREA

The study area is comprised of 11,980 hectare (HASKONING 1993) which includes portions of seven unions under Dumuria and Phultola thanas of Khulna district and two unions of Abhoynagar thana of Jessore district. Beel Dakatia is situated adjacent to the north corner of the city of Khulna and extended upto the south corner of the district Jessore ($22^{\circ}30' \text{ N}$ - $23^{\circ}20' \text{ N}$ and $89^{\circ}15' \text{ E}$ - $89^{\circ}28' \text{ E}$). Figure 1 shows its location.

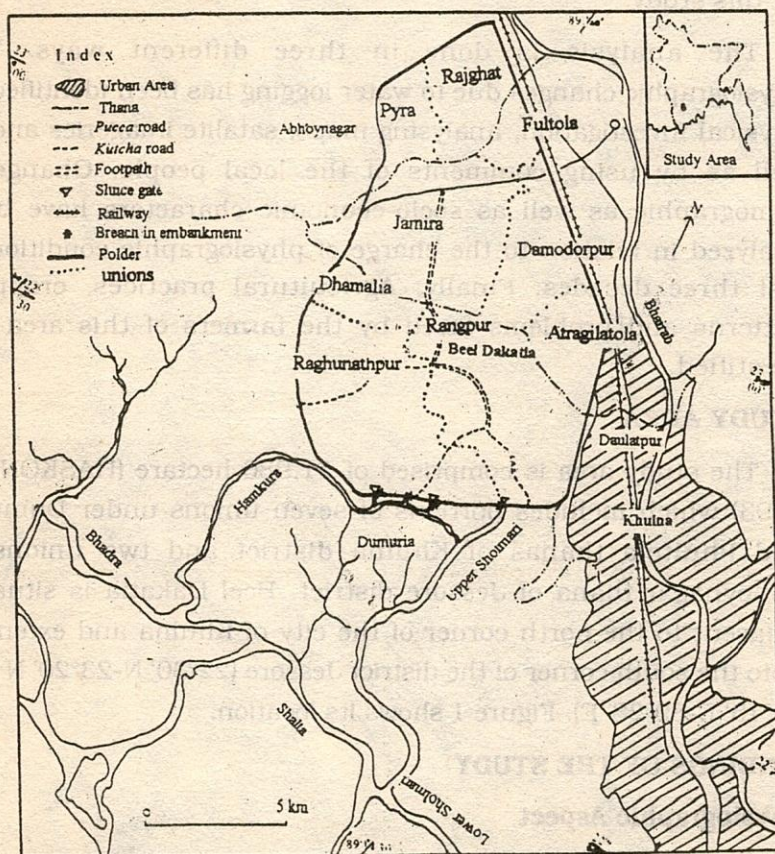
FINDINGS OF THE STUDY

Physiographic Aspect

Study area belongs to the mature deltaic plain (Choudhury, 1988). More specifically this area is the part of Gopalganj-Khulna peat basin (Brammer, 1971). Built up during the time that the

delta was being built, the activity of the river Ganges helped to build it up later as a plain (Ali and Mofizuddin, 1993). The main rivers around the study area are upper Solmari, Hamkura, Vadra, Salta as lower Solmari and Bhairab. The Hamkura river joins Bhadra before Dumuria. Beyond Dumuria Bhadra joins the river Salta and continues as lower Solmari after receiving Upper Solmari and finally in to the river Bhairab which is the main river in the area (Figure 1). These rivers of the study area are

Fig. 1. Locational Map of Beel Dakatia



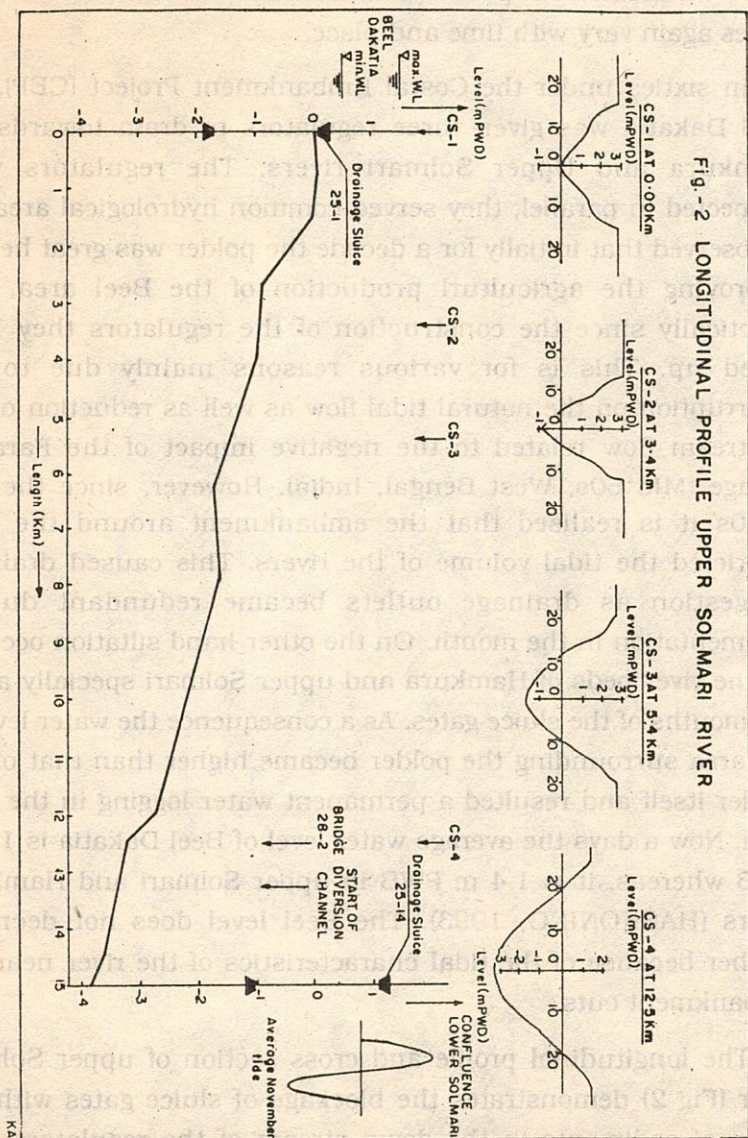
Source : HASKONING, 1993

hydrologically characterized by two phenomena : tidal flow entering from the south and fresh water flow entering from the north. These water flows also carry huge amount of suspended silts with them. Both phenomena interfere with each other, these forces again vary with time and place.

In sixties under the Costal Embankment Project (CEP), the Beel Dakatia was given three regulators to drain towards the Hamkura and Upper Solmari rivers. The regulators were connected in parallel; they served common hydrological areas. It is observed that initially for a decade the polder was great help in improving the agriculturl production of the Beel area. But practically since the construction of the regulators they have silted up. This is for various reasons mainly due to the interruption on the natural tidal flow as well as reduction of the upstream flow related to the negative impact of the Farakka barage (Mid 60s, West Bengal, India). However, since the late 1970s it is realised that the embankment around the Beel restricted the tidal volume of the rivers. This caused drainage congestion as drainage outlets became redundant due to sedimentation in the month. On the other hand siltation occurred on the river beds of Hamkura and upper Solmari specially along the mouths of the sluice gates. As a consequence the water level of the area surrounding the polder became higher than that of the polder itself and resulted a permanent water logging in the Beel area. Now a days the average water level of Beel Dakatia is 1.5 m PWB whereas, it is 1.4 m PWB in upper Solmari and Hamkura rivers (HASKONING, 1993). The Beel level does not decrease further because of the tidal characteristics of the river near the embankment cuts.

The longitudinal profile and cross section of upper Solmari river (Fig 2) demonstrates the blockage of sluice gates with the lump of sediments in the down stream of the regulators. The

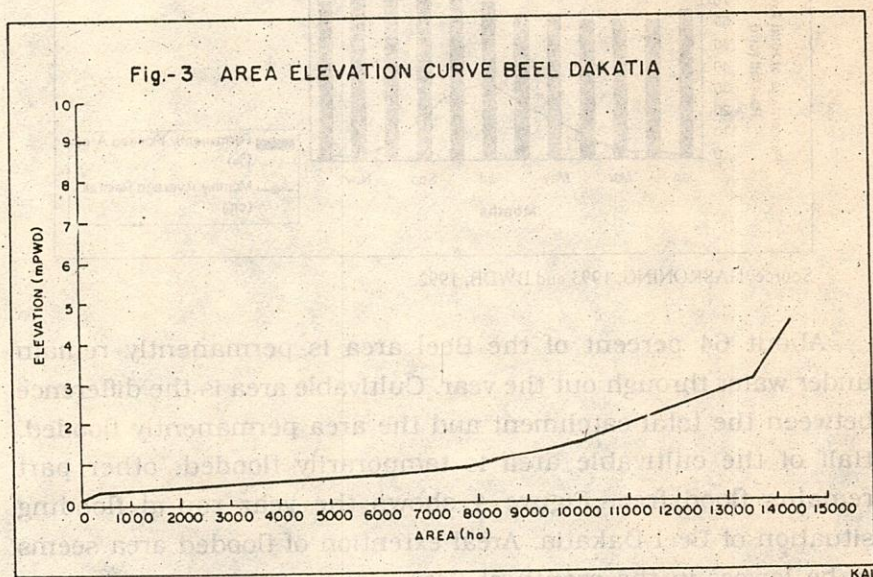
sediment has reached a level of 0.0 m PWD. The original CEP regulators is still present at the head of the river and it has a silt



Source : Haskoning, 1993

level of 1.7 m PWD. So the height of the sediment against the gate is 1.7 m (HASKONING, 1993). Also from the cross section it is clear that the river is very narrow near to the Beel and gradually becomes wider towards south.

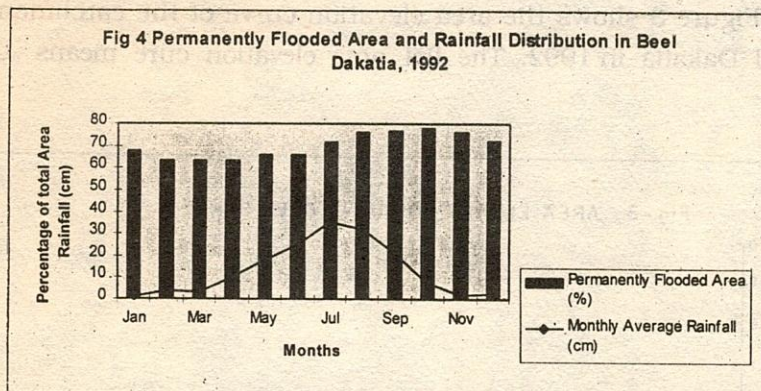
Figure 3 shows the area elevation curve of the catchment of Beel Dakatia in 1992. The flat area elevation curve means that



Source : Haskoning, 1993

presently nearly two third of the area is flooded by saline water throughout the year and remaining area is above the flood level. The minimum land level is about 0.15 m PWD. About 70 percent of the Beel area is below 1.5 m PWD. The water level during the dry season in the present situation is around 1.5 m and it fluctuates from 2.3-2.5 m PWD during the monsoon season (HASKONING, 1993). The average annual rainfall of this area is 1620 mm where minimum and maximum ranges from 1223-2030 mm (BWDB, 1992). The rainfall is again seasonal with some 58 percent during the four months period from June-September (Fig 4). Although no

water level data have been traced before the embankment cuts, it may be assumed that the present water level, certainly those during the monsoon, are higher than those, which occurred before the cuts were made.



Source: HASKONING, 1993 and BWDB, 1992.

About 64 percent of the Beel area is permanently remain under water through out the year. Cultivable area is the difference between the total catchment and the area permanently flooded. Half of the cultivable area is temporarily flooded, other part remains flood free. Figure 4 shows the year round flooding situation of Beel Dakatia. Areal extention of flooded area seems to be lowest in the month of February to April and highest in September and October. It is observed that the water level is mainly determined by the seasonal rainfall. The water level of Beel starts raising with the rains from July and reaches its maximum level in September and October (Fig. 4). The Beel Dakatia area mainly receives water from higher lands within the same catchment, which has a significant contribution to the flooding in the lower parts of the area.

Demographic and Socio-Economic Aspect

Population density of the study area (989/sq Km) seems to be high as compared to the national average of 728/sq Km in 1991.

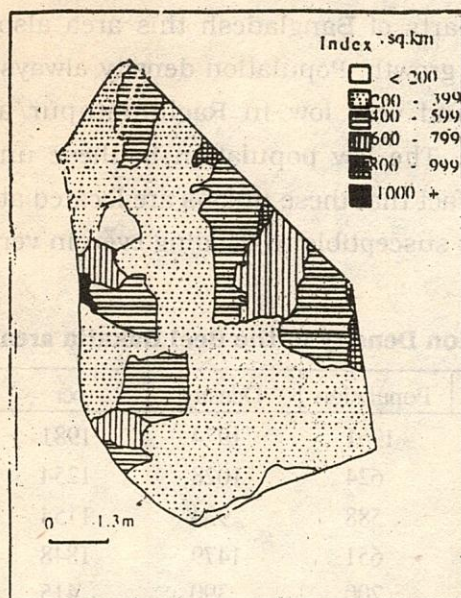
Whereas it is 778 and 558/sq km for Jessore and Khulna districts respectively. The population data for last four decades indicate that like other parts of Bangladesh this area also experiences rapid population growth. Population density always remain high in Atragilatola and very low in Raghunathpur and Rangpur unions (Table 1). The low population in these unions may be explained by the fact that these unions are located at the center of the Beel which is susceptible to flooding even in very low rainfall during monsoon.

Table 1 Population Density of the Beel Dakatia area (1961-1991)

Union	Population	Density	per	sq km
	1961	1974	1981	1991
Fultola	624	1028	1254	1529
Damodorpur	588	934	1154	1366
Atragilatola	651	1479	1848	2454
Rangpur	200	390	415	417
Dhamalia	466	660	781	792
Raghunathpur	396	537	655	652
Jamira	440	605	696	757
Rajghat	396	728	930	1142
Pyra	365	511	592	713
Total	426	700	841	984

Source : Computed from the Population Census of 1961, 1974, 1981, 1991.

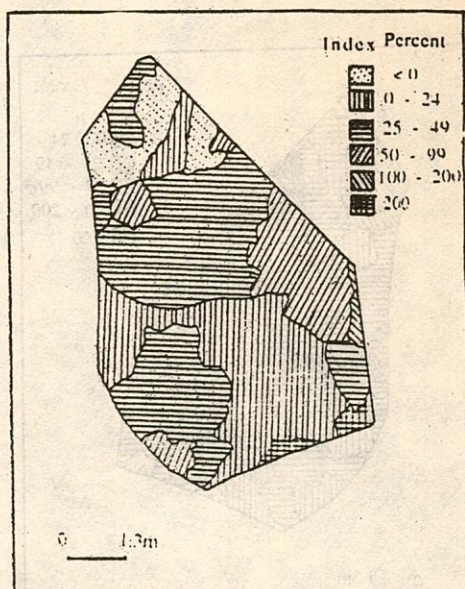
However, the village wise areal variation indicates very low population density, excepting the north and south corners and in some pockets of the Beel area. These areas are comparatively high lands. Average population density of this study area was 424/sq.km in 1961. This was higher than the national average of 383/sq km in that period (Population Census, 1961). Figure 5

Fig. 5 Population Density, 1961

Source : Population Census, 1961

shows the population density of 1961 (before polder construction) of Beel Dakatia. It is observed that the density was very low in the low lying areas which used to go under water during rainy season. However, density seems to be high along the eastern side and at western edge of the Beel, as these were comparatively high land. Presence of railway tract and Khulna Jessore high way may have resulted these high density along the eastern side of the Beel.

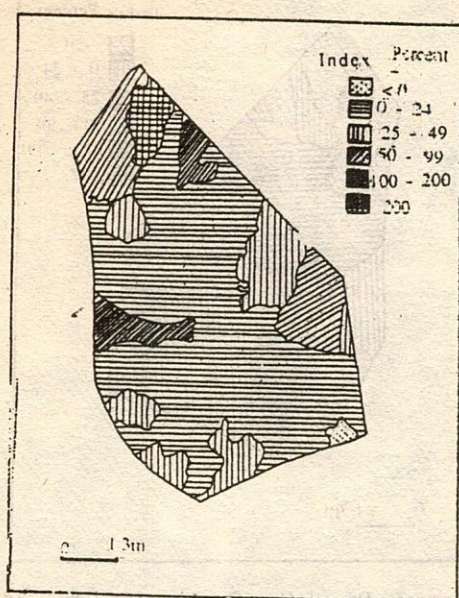
Figure 6 demonstrates the percentage of variation of population density of the villages in the study area during the inter census period of 1961-74. Variation of population density appears to be positive all over the area except in some small pockets like Sabarpur village of Rajghat union and Sabsapur village of Payra union in Abhoynagar thana of Jessore district (Fig. 6). Variation in population density is also very high in the high land and in areas adjacent to the urban center of Khulna.

Fig. 6 Variation of Population Density 1961-74

Source : Population Census, 1961 & 1974

These increase of population can be explained by the fact that with the polder construction by mid sixties and the consequent control of annual inundation enhanced the crop production as well as immigration could be entered here for this change. The survey data also supported similar trend of population change. It is observed that many large families of the study area have migrated from India and other parts of the country in the decades of 1950s and 60s. According to the local people availability of large and good agricultural land in one place and lower land price in comparison to surrounding areas have encouraged them to settle in the study area.

It is mentioned earlier that water logging initiated in mid seventies and gradually expanded spatially. Over the years most of the low areas were inundated Variation of population density during 1874-81 shows a moderate increase (Fig 7). It was less than

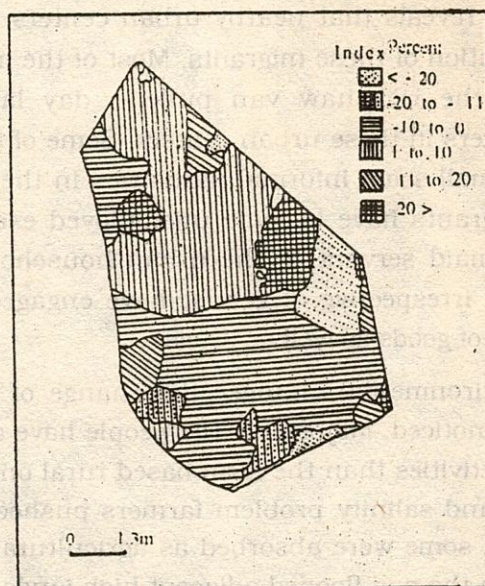
Fig. 7 Variation of Population Density 1974-81

Source : Population Census, 1974 & 1981

25 percent in the low lying areas but higher in the adjacent lands. During this period moderate variation of population occurred in low lying areas, increased to the adjacent high lands but decreased in the area adjacent to Khulna city (Fig. 7 & 8). The decrease in population density at the edge of a growing city can only be attributed to water logging and saline conditions. According to the local people due to adverse condition most of the inhabitants of this area have moved to the interior of the city as land value as well as population density of the city was not much high at that time. Population density of Khulna SMA was 5.5, 6.6 and 9.8 thousand per sq. Km in 1974, 1981 and 1991 respectively (BBS 1984 and 1994).

Areal extension of water logging increased over time and reached its maximum level by 1991. The map on variation of population density for the period 1981-91 (Fig. 8) reflects that

Fig. 8 Variation of Population Density 1981-91



Source : Population Census, 1981 & 1991

population density decreased in most of the areas except in some pockets in the periphery of the study area. By analyzing the variation of population density over decades the negative impact of water logging on the inhabitants of the Beel area is clear.

Out migration in large number is a common feature of the study area. Water logging, flooding, crop damage, salinity, unemployment are the main reasons for this migration flow. The local people mentioned that 10-15 percent of the population have migrated out from the study area in last decade. This percentage is much higher for the low lying than the higher elevated area of the Beel catchment. The survey reveals that about 20-25 percent of

the population of Rangpur, Salua, Ramkrishnapur villages have migrated to other places irrespective to their land holding or religion status. It is also noticed that this flow of out migration has started since mid 1980s. This out migration could be identified as the main reason for the negative variation of population density during 1981-91 (Fig. 8).

The survey reveals that nearby urban centers are the main place of destination of these migrants. Most of the male migrants have become the rickshaw van pullers, day labourers and industrial workers in these urban centers. Some of them are also employed in small scale informal industries in the locality. But the female migrants have become unemployed excepting a few who work as maid servant in the urban households. However many of them, irrespective of gender have engaged themselves with smuggling of goods as well as drugs.

Due to environmental changes the change of occupational pattern is also noticed. Majority of the people have adopted more urban based activities than the farm based rural one. Because of water logging and salinity problem farmers pushed out of their own farms and some were absorbed as agricultural labourer on other's farms in the non flooded adjacent high lands.

The survey identifies that shifting of occupation has been mainly occurring since mid 1980s. Table 2 demonstrates the occupational pattern of the head of the household of Beel Dakatia and its surrounding areas in 1992. It is observed that farming (own and other farms) is the primary occupation of about half (49.1%) of the working population of the adjacent area of Beel Dakatia. Whereas, only 18.9 percent of the household of Beel Dakatia depends on agriculture. On the other hand 30 percent of the head of the household of Beel Dakatia work as agriculture labourer in the adjacent areas and only 13 percent of the inhabitants of the adjacent area work as agriculture labourer. Non agricultural activities are prominent among the Beel Dakatia people as compared to the population of the

neighbouring areas. From the survey it is understood that prolonged flooding in the Beel area has pushed them to adopt the non agricultural activities rather than the traditional one.

This is also supported by the occupational pattern of the inhabitants of the Beel Dakatia interms of affected and nonaffected areas in 1981 and 1991 (Khatun and Ahmad, 1995). According to BBS (1984) cultivation was the major activity of the inhabitants of Beel Dakatia in 1981. However, the area was experiencing water logging but of a lesser intensity, more people till 1981 were involved with cultivation in the affected areas of the Beel. A changed pattern emerges in 1991 (BBS, 1994). Here the shift from agriculture to non agricultural activities is prominent. It is also apparent that the number of categories/types of activity pursued by the inhabitants has increased over the decade.

Table 2 Major occupations of the Household Head of Beel Dakatia and its surrounding area (percentage)

Major Occupation of Head of the Household	Beel Dakatia	Surrounding of Beel Dakatia
Agriculture (own farm)	05.2	21.3
Agriculture (own and others farm)	13.7	27.8
Agriculture Laborer	28.7	12.0
Fishing/Fishing laborer	03.7	02.8
Non Agri/Non Fish Laborer	09.6	02.8
Services	18.5	0.83
Transport Related Activities	08.6	08.3
Business	05.5	07.4
Others	06.5	09.3
Total	100.0	100.0

Source: Questionnaire Survey, 1992.

Negative impact of water logging can be visualized by comparing the annual income of the head of the household of Beel Dakatia and its surrounding areas. The survey identified that average annual income of the head of the household of Beel Dakatia was Tk. 24,170 in 1992. But it was Tk. 39,400 in the surrounding areas of Beel Dakatia. It should be mentioned here

that only the rural areas have been considered here as the surrounding but not the Jessore or Khulna city. More than 58 percent of the household of Beel Dakatia earned less than Tk. 20,000 per annum whereas, 18 percent household of the adjacent areas had this earning. Non of the inhabitant of Beel area had annul income of Tk. 60,000, but 13 percent inhabitants of the adjacent area earned more than Tk. 60,000 per annum (Table 3).

Table 3 Annual Income of the Household Head of Beel Dakatia and Its Surrounding area (percentage).

Annual Income of Head of the Household (TK)	Beel Dakatia	Surrounding of Beel Dakatia
below 10,000	33.3	16.9
10,000 - 19,000	25.0	16.9
20,000 - 29,000	11.1	15.1
30,000 - 39,000	08.3	09.4
40,000 - 49,000	05.6	15.1
50,000 - 59,000	05.6	05.7
60,000 - 69,000	08.3	03.8
70,000 - 79,000	02.8	03.8
80,000 - 89,000	-	01.9
90,000 - 99,000	-	05.7
100,000 and above	-	05.7
Total	100.0	100.0

Source : Questionnaire Survey, 1992

However, with saline conditions of the Beel, the area had become a potential and important ground for a new commercial activity of shrimp culture. As a result the rich and local elits are trying to make money by cultivating shrimp in the area. On the other hand the farmers are trying to produce as much as they can for their survival. As a consequence the area witnessed political and social conflicts between shrimp and rice farmers.

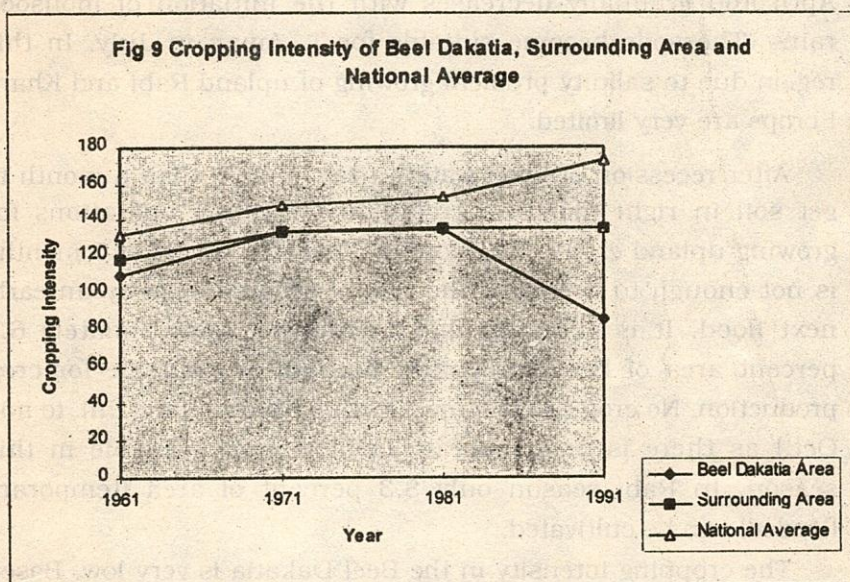
Agricultural Aspect

It is estimated that only 32 percent of the Beel area is available for cultivation, 14 percent of which is flood free and rest 18 percent is temporarily flooded (HASKONING, 1993). Temporarily flooded area is mostly used for single crop in dry season while double and triple crops are found on the flood free areas. During Rabi (mid Oct. to mid. Mar.) and early Kharif I (mid Mar. to mid Jul.) in south, surface soil become highly saline due to evaporation of soil moisture and accumulation of salts as the saline ground water moves upwards through capillary activities. Top soil begins to become saline in November, reaches its peak in April and gradually decreases with the initiation of monsoon rains. The soils become suitable for T. Aman in July. In this region due to salinity problem growing of upland Rabi and Kharif I crops are very limited.

After recession of flood water, it takes more than a month to get soil in right moisture condition for tillage operations for growing upland crops. Therefore, a flood free period of 5 months is not enough to overcome the risk of crop damage by an early next flood. It is observed that in Kharif I approximately 6.2 percent area of Beel (temporary flooded) is available for crop production. No crop can be grown during Kharif II (mid Jul. to mid Oct.) as there is no temporary flooded land available in this season. In Rabi season only 8.3 percent of area (temporary flooded) can be cultivated.

The cropping intensity in the Beel Dakatia is very low. Based on the information obtained from Thana Agriculture Offices, it has been computed that the cropping intensity of the Beel area during 1991/92 was only 85 percent. However, cropping intensity of the surrounding area of Beel Dakatia was 135 percent which was much lower than the national average of 173 percent (BBS 1994). Figure 9 shows the cropping intensity of Beel Dakatia, its surrounding area as well as Bangladesh as a whole for four

decades. Cropping intensity has been positively increasing all over the country as well as the surrounding areas of Beel Dakatia. However, positive as well as negative impact of the embankment on the cropping intensity of Beel Dakatia over a period of 3 decades is evident in figure 9. In 1961 the intensity was lower than the surrounding area but after the completion of the embankment by mid 60s cropping intensity increased remarkably in 1971. Even it exceeded the level of intensity in its surrounding areas of the Beel and this situation continued until 1981. But the environmental situation has become worsen in 1991 when the intensity reduced very sharply (Fig 9).



Source: Computed from the Data collected from respective Thana Agriculture Offices, 1992.

In Beel Dakatia the most popular crop seems to be the T Aman which covers 50 percent of the total cropped area. Two third of the land was covered with local (L) and one third with High Yielding Varieties (HYV). However, in the surrounding areas important rice seems to be T Aman(L) and followed by B Aman (L) and Boro

(HYV). Availability of more free area as compared to Beel Dakatia facilitates this area to grow varieties of rice. It is noticed that due to flooding as well as salinity problem, very limited area is utilized for growing vegetables and other crops both in Beel Dakatia and its surrounding areas (Table 4).

Under the prevailing flooding condition most of the cultivated area is under low yielding local T & B Aman. The Agro-Socio economic survey reveals that the farmers of this area are interested to cultivate high yielding varieties (HYV) of paddy if they would get flood free land with proper flood control, drainage and irrigation facilities. Use of inputs such as manures, fertilizers and pesticides and cost of production as well as yield per hectare are low at present (Akanda, 1993). The farmers are reluctant to use their inputs under the prevailing flooding condition. According to BCAS (1993), due to unproductivity the yearly loss in agriculture is about 12 million in Beel Dakatia.

Table 4 Cropping Pattern of Beel Dakatia and its Surrounding Areas.

Crops Grown	Beel Dakatia (% of Net Cultivated Area)	Surrounding Beel Dakatia (% of Net Cultivated Area)
B. Aus (L)	07.2	19.4
T. Aus (HYV)	00.8	00.0
B. Aman (L)	06.0	36.4
T. Aman (L)	38.9	58.8
T. Aman (HYV)	19.1	00.0
Boro (L)	02.2	00.0
Boro (HYV)	04.8	04.7
Wheat	00.0	00.4
Sugarcane	00.0	00.7
Jute	01.0	00.9
Oil seed	00.9	02.9
Pulse	00.1	03.1
Potato	01.0	00.2
Vegetable	04.0	09.1
Banana	00.0	00.5
Cropping Intensity	85.0	135.0

Source : Computed from data collected by Agro-Socio-economic survey and respective Thana Agriculture Offices, 1992.

Because of the water-logging condition the homestead gardening as well as cash crops are getting to be abolished. Availability of grazing land for livestock is almost absent in Beel

Dakatia. However, it is observed that 87 percent of the livestock of the study area have perished after been afflicted with diseases due to saline water (HASKONING, 1993). The poultry too have met with a similar fate. Fisheries, once an important source of livelihood, also have had a tremendous setback in the present day changed environment. The breeding ground of fresh water fish have been destroyed due to stagnant saline condition the total catch have thus been affected tremendously.

CONCLUSION

Beel Dakatia is the glaring example of a man made disaster. Unforeseen condition, faulty construction of the coastal embankment and lack of proper maintenance of the polders of Beel Dakatia however led to a tragic situation. Instead of protecting the Beel from saline water intrusion, there was initiation of water logging together with salinity and which turned into a huge permanent water body. The impact of this water logging and salinity over a period of thirty years in Beel Dakatia has been disastrous for the physical environment; the people of the area and their livelihood. The magnitude and suffering of the population is incalculable. The changed natural environment have forced people to move out from their homestead to the nearby urban centers and adopt new pattern of livelihood. With the loss of potential agricultural land cropping intensity has fallen down tremendously. This changed saline environment also have negative impact on homestead forestry, livestock and poultry to a great extent. Considering the damaged environment and suffering the inhabitants, the government of Bangladesh has undertaken an emergency action drainage plan in Beel Dakatia since late 1993. Since implementation of the plan water recession process has been started in Beel Dakatia. The local people are cultivating the accreted land with minimum inputs. Now the farmers are to be motivated to cultivate other new

crops with high input which would be more appropriate in the changing environment rather than traditional rice. The changing natural environment are forcing people to a social conflict between rice and shrimp cultivators, which must be looked at with necessary steps. For development planners of Bangladesh the experience of Beel Dakatia has been a lesson learnt but at a tremendous cost of life and property. The locals however, feel that care must be taken before making any plan to control the nature for *Nature* can be ruthless when it wants to retaliate.

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UNDERSTANDING CONSUMER: THE WAY TO EASE THE PAIN IN BANGLADESHI FABRICS MARKETING

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ABSTRACT

In today's competitive business environment success depends on the marketer's ability to understand consumers. All business concern should start with prospective consumers or target market. It would be a well start if it is based on the findings of consumer behaviour study. In this paper attempts have been made to discuss some socio-economic and psychological aspects of consumer behaviour in relation to the marketing of some selected textile commodities in Bangladesh. Some policy implications and measures were also suggested, which would be useful to the persons institutions or producers involved in the marketing of textile commodities or in the matter of policy formulation.

Introduction

Consumer behaviour is consumers' response to the marketers' efforts in relation to the marketing of a particular product. In the market place consumers can do whatever they like. Consumers may accept or reject a product offered to them. "Consumer behaviour is the process whereby individual decide whether, what, when, where, how and from whom to purchase goods and services.¹ The study of consumer behaviour is the study of how consumers usually make decisions to spend their available resources for desired products. Before making the actual purchase the buyer has to make a long decision trip and if he is alone in the trip, he is to seek information, make decisions and by the product himself.² In practice there are many purchasing situations where these activities are undertaken by different persons and they are: influencers, deciders, buyers, and

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users.³ In such cases producers and marketers must have to know who influences the consumers to choose a particular type of product. Study of consumer behaviour provide producers with the knowledge regarding what consumers buy, why, when, where and how they buy it.

Statement of Problem

The domestic demand for fabrics in Bangladesh is 1210 million metres.⁴ Total production capacity of both privately and publicly owned 25,565 powerlooms is 499,8 m. metres.⁵ But according to textile mills owners association it is about 600 m. metres. Besides, there are 5,01,834 handlooms in the country having production capacity of 690 m. metres.⁶ According to the Fourth Five Year Plan the total number of handlooms in the country is 5.3 lakhs and it is expected that production of fabrics will rise to 1925 m. metres in the year 1994-95.⁷ However, having such production capacity the question of smuggling and import of fabrics should not arise. Rather, it is quite possible to meet the domestic demand by the proper utilization of existing production capacity. It may also create surplus which could be exported abroad. But from the observation of sellers and concerned persons yearly 400 m. metres of fabrics comes in through smuggling on average. Cost of fabrics imported in the last few years shown below:

Import of Cloth by Harmonised System

Year	Cost (Million Taka)
1988-89	13,478
1989-90	20,071
1990-91	21,809

Source: Bangladesh Bureau of Sattistics, Statistical Year Book-1992. P-317.

On the other hand, a large volume of fabrics produced by BTMC and other privately owned textile mills remain unsold. The market share of imported and smuggled fabrics increase considerably and accommodated by a corresponding decline in the share of locally produced fabrics. Local producing units are facing trouble with their products in competition which also compelled them to face industrial sickness and closure.

Needs of the Study

Prevailing marketing practices followed by the fabrics producers in Bangladesh, mostly production and sales oriented. Fabrics produced in the local producing units have mere consumer acceptance, which creates an opportunity for import and smuggling of fabrics. Having sufficient production capacity to meet the domestic demand, with the given opportunity in most of the cases smuggled and imported fabrics dominate the local market, consumers in Bangladesh usually show their preference to foreign fabrics over domestic fabrics, especially, in the case of Saree, Shirting and Suiting. The reason is that in most of the cases producers in Bangladesh fail to produce fabrics according to the needs, expectations and choices of consumers. Thus, there is something wrong in the existing marketing policies, strategies and decisions of these fabrics producing units. There exists a considerable gap between the consumers expectation and the producers perception. Understanding consumers will enable the producers to reduce the gap between consumers' expectation and producers' perception. It may also provide sufficient knowledge to the producers to reduce the dominance of foreign fabrics over domestic fabrics.

Objectives of the Study

The main objectives of the study are as follows:

1. To study the consumers preference and liking for fabrics;
2. To examine the buying process and shopping habits of the consumers;

3. To study the consumers awareness in respect of brand and origin of production;
4. To study consumers' responses regarding quality and prices of fabrics;
5. To study the consumers' attitudes towards the promotional measures taken by the marketers of fabrics;
6. To identify the influencers in choosing a particular brand or type of fabric; and
7. To ascertain the family expenditure pattern on fabrics.

Methodology

This paper is prepared on the basis of the research study entitled, "Study of consumer Behaviour in Relation to the Marketing of finished cloth in Bangladesh". For the study consumers have been divided into four strata according to their geographical location i.e. metropolitan, urban, semiurban and rural. Then a sample of 300 consumers covering all strata were selected at random for the purpose of collecting information regarding their consumption pattern and behaviour in respect of some selected textile commodities. A sample of 30 sellers were selected for the purpose of collecting information relevant to the marketing of selected textile commodities by using purposive sampling. The study was carried out on pre-tested and structured questionnaire. In some cases primary information were collected from sales centres through observation.

Though the study is based on primary data, secondary data were also collected from various sources. The collected data and information have been statistically tabulated, processed and critically analyzed in order to make the study more informative, useful and purposeful.

Although a comprehensive study encompassing the whole Bangladesh and considering all types of consumers and textile commodities, could give a complete picture of consumer

behaviour. But the limitation of time and financial support confined the researcher to undertake the study on a limited scale as it is completed.

Review of Earlier Studies

Amanullah⁸ in his published article focused the problems and prospects in the marketing of Bangladeshi printed saree. He analyzed the cost and price structure of printed cotton saree in Bangladesh and compared it with those of Indian saree available in Bangladesh. He suggested to reduce the production cost, improve the design and to motivate the consumers.

Zaid Bakht⁹ in his study ascertained the level and composition of textile demand in Bangladesh for 1986-87. In his study he also highlighted the additional domestic demand for yarn, additional spinning capacity, weaving capacity and some implications for finishing industry and the structure of textile demand in Bangladesh.

Mehta¹⁰ in his study explained the quality and price perception as well as the brand choice of Indian consumers in respect of readymade shirts. In his study he mentioned some policy implications which have considerable value to marketing management in its decision making.

Rashidul Hasan¹¹ in a case study described the attitude of the consumers towards the newly marketed products and also what consumers think of the advertisement of new products. In the study the advertisement of Gold Flake cigarettes and Feel Free sanitary towels were considered. In the study the researcher noted some policy implications for the advertisers and for the producers of products regarding selection of media, target market and development of advertising layout. In the study the researcher also discussed the influencers in choosing brand and why people using one particular brand did not switch over to other brands.

Major Findings

1. Consumers in Bangladesh belonging to various social classes show ultra-modern, moderated and traditional outlook and fashion behaviour.
2. In most of the cases consumption of fabrics depends on consumers' economic conditions and influenced by social and cultural factors.
3. In choosing a particular type of fabrics salesmen and users' friends play a significant role.
4. In the urban and metropolitan areas the voice of educated housewives and female consumers have become stronger in the affairs of fabrics buying and choosing for themselves and for other family members.
5. In the urban and metropolitan areas the users usually actively participate in buying and choosing fabrics. But in rural and semi-urban areas, head of the family usually choose and purchase fabrics for the family members and himself.
6. Most of the rural consumers have no brand loyalty and do not consider seller and origin of production. But urban and metropolitan consumers often give emphasis on origin of production and shopping centre.
7. Seasonal influence is insignificant in fabrics buying. Consumers mostly buy fabrics at the time of festival and after the needs arising with the availability of purchasing power.
8. Expenditure for fabrics varies considerably according to the geographical location and annual income. On average expenditure for fabrics in rural, semi-urban, urban and metropolitan families are 6.5-8.5%, 7-8.5%, 6.8-11% and 7.5-14.5% of annual income respectively.

9. Prime reasons for consumers' preference to foreign fabrics are novelty print, better design, fastness of colour, images and comfortability.
10. About 40% consumers are poor judges of quality. That is why consumers usually consider price, origin of production, salesman's opinion and image to judge quality.
11. Considerable gap between actual price and buyers' anticipation often creates dissonance and displeasure to consumers and creates negative attitude towards the product.
12. Sample respondents were more satisfied with the local fabrics. It is observed that the level of satisfaction varies with the types of fabrics, consumers' location and fashion behaviour.
13. Producers in Bangladesh are interested in selling fabrics but never give proper attention on what consumers think about their firms and products. Hence they fail to create distinctive image and positive attitude in favour of their fabrics.
14. Consumers in Bangladesh mostly strive for economy. But a small section of the consumers want to be a fashion leader in the social circle.
15. Purchase of fabrics with prior plan or without plan depends on the types of fabrics and cost involvement. Costly and specialty types of fabrics are usually purchased with prior planning. In some cases consumers' attitude have an emotional base rather logical. In that case question of prior planning to purchase does not arise.

Conclusion

The task of understanding consumers in no sense is complete. Consumers' needs, motives, perception and attitudes are not within the full control of producers. But the study of consumer behaviour can help in uncovering at least some

important aspects of complex human behaviour. Producers should try to understand these aspects of consumer behaviour and also attempts should be made to influence and persuade consumers directly or indirectly through effective marketing measures. At the same time, creating consumer acceptance and getting preference products should be produced and marketed according to the needs, desires and expectations of the consumer. The researcher hopes, the findings and recommendations presented in this paper will prove useful to the producers of fabrics in Bangladesh. It will also enable them to design an effective marketing programme in a more efficient manner.

Recommendations

On the basis of findings discussed above, some recommendations and policy implications that were found important are as follows:

1. As consumers' fashion behaviour, outlook, consumption pattern needs and demand vary considerably, it is wise to divide them into distinct segments on the basis of homogeneity of nature. In that case producers would be in a better position to understand consumer perfectly and to design separate marketing programme in view of satisfying target market in a more efficient manner. Consumers geographic location, social class, age, sex, income etc. may be the basis of segmentation.
2. To increase the level of satisfaction and get the preference producers should ensure the quality of fabrics. But quality should be settled from consumers point of view, so that they can satisfy their needs, desires and expectations with the locally produced fabrics.
3. Sellers and salesmen must be motivated continuously to do their best job in favour of locally produced fabrics.
4. The availability of price information in first instance would avoid the dissonance and displeasure, as the need to

estimate the price would be eliminated. It would be useful to tag price information with the product if possible. Resale price maintenance would have a positive impact in avoiding such dissonance and displeasure and in creating confidence.

5. For the interest of building image in favour of locally produced fabrics producers should avoid misleading promotional activities. Promotion should be creative, fair, just and enough. In support of building image fashion show, trade fare and exhibition in different places inside the country and abroad may generate positive result.

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Appendix : Tables containing data.

Table-1. Percentage Distribution of Consumers by Participation in Buying.

Participants	Rural	Semiurban	Urban	Metropolitan
User	12%	16%	48%	57%
Head of the family	80%	76%	39%	19%
Others	8%	8%	23%	34%
Total	100%	100%	100%	100%

Source: Compiled from the study.

Table-2. Percentage distribution of Consumers by Participation in Buying Decision Making

Participants	Rural	Semiurban	Urban	Metropolitan
1) User	9%	15%	9%	20%
2) Friends	18%	26%	20%	20%
3) Family Members	9%	14%	16%	10%
4) Salesman	47%	25%	26%	22%
5) Family Members+User	10%	12%	19%	16%
6) Friends+Salesman	7%	8%	10%	12%
Total	100%	100%	100%	100%

Source: Compiled from the study

Table-2. Percentage distribution of consumers by Seller and Brand loyalty

Particulars	Rural	Semiurban	Urban	Metropolitan
Loyal to brand	19%	21%	27%	32%
Loyal to seller	23%	28%	16%	36%
Can not be generalize	58%	51%	57%	32%
Total	100%	100%	100%	100%

Source: Compiled from the present study.

Table-4. Percentage Distribution of Consumers by buying Motives

Motives	Rural	Semiurban	Urban	Metropolitan
Pleasing himself	2%	3.5%	3.5%	4%
Social position	33%	39%	42%	46%
Be a fashion leader	1%	56%	51.5%	46.5%
Strive for economy	64%	1.5%	2%	3.5%
Total	100%	100%	100%	100%

Source: Compiled from the present study.

Table-5. Percentage Distribution of consumers by First Source of Information (Item Wise)

Sources	Saree	Lungi	Shirting	Suiting	Bedsheet	Others
Television	12.0%	9.0%	11.0%	11.0%	8.0%	1.0%
Radio	8.0%	2.0%	--	--	8.0%	--
Magazine	6.0%	--	1.0%	1.0%	1.0%	--
Exhibition	0.5%	--	--	--	--	--
Salesman	43.5%	70.0%	58.0%	58.0%	60.0%	62.0%
Friends	27.0%	15.0%	28.0%	28.0%	28.0%	32.0%
Others	3.0%	4.0%	2.0%	2.0%	2.0%	5.2%
Total	100%	100%	100%	100%	100%	100%

Source: Compiled from the present study.

Table-6. Percentage Distribution of consumers by the level of Satisfaction with Locally Produced Fabrics (Item Wise)

Items	Level of Satisfaction			
	Full	Average	Below-Average	Unsatisfied
Saree	--	12%	74%	14%
Lungi	2%	80%	13%	5%
Shirting	--	5%	68%	27%
Suiting	--	4%	47%	49%
Bed-sheet	--	70%	22%	8%
Others	--	20%	57%	23%

Source: Compiled from the present study.

Table-7. Percentage Distribution of Consumers by Preference of Fabrics (Item Wise)

Items	Rural		Semi-urban		Urban		Metropolitan	
	D	F	D	F	D	F	D	F
Saree	42	58	41	59	32	68	32	68
Lungi	99	1	99	1	99	1	99	1
Shirting	41	59	38	62	36	64	34	66
Suiting	39	61	37	63	33	67	31	69
Bedsheet	43	57	48	52	58	42	59	41
Others	36	64	36	64	35	65	31	69

Source: Compiled from the present study.

(D= Domestically made fabrics, F=Foreign made fabrics)

Table-8. Percentage Distribution of Consumers by Reason for Preference to Foreign Fabrics

Reasons	Rural	Semiurban	Urban	Metropolitan
Longevity	12.0%	10.0%	8.5%	9.0%
Novelty print	17.0%	23.0%	25.0%	26.0%
Comfortability	4.0%	11.0%	12.0%	24.0%
Fast colour	26.0%	26.0%	23.0%	22.0%
Relatively cheaper	26.0%	16.0%	20.0%	7.5%
No particular reason	8.5%	8.5%	6.5%	6.5%
other reasons	6.5%	5.5%	5.0%	5.0%
Total	100%	100%	100%	100%

Source: Compiled from the present study.

Table-9. Annual Expenditure for clothing in relation to Income

Yearly Income (in "000" taka)	No. of Respondents	Expenditure (% of annual income)			
		Rural	Semiurban	Urban	Metropolitan
30---50	20	6.50 %	7.00%	6.80 %	7.00%
50---70	28	6.75 %	7.00%	7.00 %	8.00%
70---90	38	8.00 %	8.00%	8.00 %	8.50%
90---110	48	8.50 %	8.50%	8.50 %	9.00%
110---130	36	8.50 %	8.50%	8.50 %	9.50%
130---150	75	7.50 %	7.00%	9.00 %	12.00%
150---170	35	-----	7.50% *	10.5 %	12.00%
170---190	17	-----	-----	11.0 %	13.00%
190 and above	3	-----	-----	-----	14.00%
Total	300				

Source: Compiled from the present study.**Table-10.** Percentage distribution of Consumers By Usual Time of Buying

Usual Time of Buying	Percentage of Consumers
Winter	5.0%
Summer	2.5%
After need arise	20.0%
Festival	40.0%
Availability of Money	20.0%
No usual time	12.5%
Total	100%

Source: Compiled from the present study.

Table-11. Percentage Distribution of Consumers By Their Opinion About the Different Aspects of Domestic Fabrics

Aspects	Items					
	Saree	Lungi	Shirting	Suiting	Bed-Sheet	Others
Price:						
Low	13.33	20.00	26.67	43.33	26.67	23.33
High	66.67	46.67	46.67	36.67	56.67	70.00
Considerable	20.00	33.33	26.66	20.00	16.66	06.67
Design:						
Very good	06.67	33.33	-----	-----	10.00	03.33
Good	26.67	53.33	36.67	23.33	33.33	16.67
Considerable	20.00	06.68	40.00	50.00	40.00	46.67
Inferior	33.33	03.33	10.00	16.67	10.00	20.00
Worst	13.33	03.03	13.33	10.00	06.67	13.33
Longevity:						
Minimum	16.67	13.33	33.33	46.67	40.00	40.00
Maximum	50.00	66.67	26.67	16.67	33.33	20.00
Considerable	33.33	20.00	40.00	36.66	26.67	40.00
Colour:						
Choiceable	15.00	36.67	20.00	10.00	32.00	13.67
Average	35.00	47.00	40.00	35.00	43.00	50.00
Belowaverage	50.00	16.33	40.00	55.00	15.00	36.33
Knitting:						
Very fine	56.67	73.33	33.33	26.67	20.00	13.33
Fine	18.33	13.33	40.00	33.33	30.00	20.00
Average	10.67	03.34	13.33	20.00	16.67	16.67
Not so fine	10.00	10.00	10.00	13.33	30.33	36.67
Not fine at all	04.33	-----	03.33	06.67	02.00	13.33

Source: Compiled from the study.

Table-12. Percentage Distribution of Consumers By The Ability to Judge the Quality of Fabrics.

Level of Ability	Percentage of Consumers
Very Good	4%
Good	12%
Average	32%
Poor	40%
Very poor	12%
Total	100%

Source: Compiled from the present study.

Table-13. Percentage Distribution of Consumers By the Cues Perceived Regarding Quality.

Cues	Rural	Semiurban	Urban	Metropolitan
Price	75%	73%	74%	63%
Design	75%	75%	78%	80%
Comfortability	48%	56%	63%	68%
Longevity	53%	41%	38%	32%
Texture	28%	37%	42%	41%
Image	56%	61%	69%	72%
Colour combination	65%	62%	60%	62%
Origin of production	32%	42%	77%	79%

Source: Compiled from the present study.

understanding consumers
 Table 12: Percentage Distribution of Consumers by the Ability to
 Judge the Quality of Products

Level of Ability	Percentage of Consumers
Very Good	4%
Good	15%
Average	33%
Poor	40%
Very poor	12%
Total	100%

Source: Compiled from the present study
 Table 13: Percentage Distribution of Consumers by the Level of
 Perceived Retailing Quality

Consumers	Rural	Urban	Metropolitan
Price	75%	75%	65%
Location	65%	75%	80%
Convenience	45%	55%	65%
Low cost	55%	45%	55%
Service	55%	45%	45%
Image	55%	65%	55%
Close relationship	55%	65%	65%
Form of motivation	55%	45%	75%

Source: Compiled from the present study

PROJECT IMPLEMENTATION AND MONITORING SYSTEM OF SUGAR INDUSTRY IN BANGLADESH

M. Shah Alam*

ABSTRACT

The sugar industry plays an important role in the economic development of Bangladesh. Government of Bangladesh therefore, undertakes a number of development steps in different plan periods with adequate provision of funds in order to improve the operational activities of the industry. Industry's success in particular and economic growth of the country in general largely depend upon timely implementation of projects and their timely commercial operations. Analysis of the study is done on the basis of project implementation and monitoring system of the industry. It is observed in the study that because of inadequate implementation and monitoring system many undertaken projects have not been completed within given frame which results in time over-run and cost over-run. To improve the implementation and monitoring system of the industry, the study had outlined some suggestions which might be useful for the executives considered responsible for project implementation of the industry.

Introduction

The sugar industry in Bangladesh is the second largest agro-based and labour intensive industry next to jute industry in terms of employment of labour force and number of mills¹. At present, there are 16 sugar mills operating in different parts in Bangladesh. The production capacity of the industry is around 2 lakh tons of sugar with 120 effective crushing days per year. For the better management and control of sugar industry, the Government of Bangladesh has set up Bangladesh Sugar and

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Food Industries Corporation (BSFIC) as a controlling agent which is administered by the Board of Directors. Besides, in the unit level there is an administrative body in each unit headed by its general manager. The management of the respective unit is considered responsible for all its activities and functions to the corporation at the centre.

The importance of the sugar industry is considered from two points of view. These are: direct contribution and indirect contribution to the national economy. Direct contribution includes: production of sugar, production of by-products i.e bagasse and molasses, employment generation, infrastructural development surrounding the mills area, contribution to the national exchequer in the form of excise duty, sales tax, customs duty etc. On the other hand, indirect contribution includes: setting up other industries viz. paper mills, distillery factory based upon by-products of sugar industry, employment opportunity of these depended industries and their contribution to national exchequary etc.

Despite the importance it is learnt from the corporation that the present production level of the industry can meet only 60% of domestic demand of sugar. So, Government of Bangladesh emphasises much on the development of sugar industry in order to producing more sugar. Accordingly, the government undertakes a number of development projects in the different plan periods with adequate provision of funds. It is seen in the statistics available in the corporation that many of the undertaken projects have not been implemented in time. The development of the industry in particular and economic growth of the country in general largely depend upon proper implementation of undertaken project and their timely commercial operation. On the other hand, economic growth and development would be the function of the resources available for.

investment and its efficient and effective utilisation in the industry. So far, there has not been any study done on project implementation and monitoring system of the sugar industry. Considering the importance of and following the vacuum in research, the present study on Project Implementation and Monitoring System of Sugar Industry in Bangladesh has been undertaken.

Objectives

In line with the problem mentioned above the objectives on the present study among others, are as follows:

- (i) To build up theoretical concepts on implementation and monitoring system of development projects;
- (ii) To understand the implementation and monitoring system of development project of sugar industry in Bangladesh.
- (iii) To find out the variations among theoretical concepts and existing system of implementation and monitoring of development project of the industry;
- (iv) To suggest possible ways and means for the betterment of the industry for efficient and effective implementation and monitoring of development projects.

Methodology

The sugar industry in Bangladesh has been purposively selected for the present study because of the co-operative attitude of executives to divulge necessary data in conducting the study.

Data used in the study are collected from annual reports for development projects, management information system, annual budgets of the government, ministry of industries, ministry of planning, Bangladesh Economic survey, Five year plans etc. Besides, interviews were conducted with the executives

considered responsible in connection with implementation of development projects in the sugar industry.

Analysis of the present study is done on the basis of the data available in the Third Five Year Plan (1985-90).

THEORETICAL CONCEPTS

Project Implementation:

Project implementation means establishment of projects for operation. Successful implementation of a project is a result of planned and co-ordinated effort. Approval of a project starts beginning rather than end of a project. The simple assumption here is that a sum of money is authorised to be spent. After completion of decision process, the project starts to be implemented for achieving the expected results as early as possible. Sometimes, achieving of potential result from project implementation has been painfully slow because of poorly defined responsibility for project implementation. As long as responsibility for project implementation is clear, result of implementation has been most effective. Therefore, it has been said that installation and exploitation of new machine should be the responsibility of individuals². Thus, successful implementation of projects keep the projects on progressing in a steady and planned manner and brings them into full operation economically and expeditiously.

Project Monitoring:

Project monitoring ensures the implementation of project planning. On the other words, monitoring of projects may be defined as to see whether implementation of projects has been done according to plan or not. Completion of projects according to plan have a far reaching impact on a business firm, hence, question of monitoring. The monitoring system implies suggestions for needed revisions of a project, providing information to improve further estimates of cash flows risk as

well as indication of the best projects. But according to Sarmiento, monitoring means the ability to direct the organisation's activities towards the fulfillment of its objectives³. For this, variables are monitored to determine the outcome of an activity to evaluate discrepancies with expected performance and to take corrective action if these discrepancies would impede completion to the expected results to objectives. Again, Anthony refers some methods, procedures and devices to assure compliance with organisational policies and strategies⁴. Further, monitoring vested upon sound management planning could restrict expenditure to economically justifiable addition and guard against stagnation in the maintenance, replacement and acquisition of assets of undertaken projects⁵.

As mentioned by Sarmiento that Government monitoring of undertaken projects under public sector as directives of regulations of government which attempt to influence enterprises, behavior to meet their objectives or desires in the operation of the enterprises and control of results.

From the above details it has become clear that monitoring is an essential part of planning. It means to see the actual work whether it is done according to plan. Monitoring of public sector undertaken projects is an organised systematic process and structure that government uses to ensure management to comply with the public sector objectives and policies.

Process of Monitoring:

There is a considerable conformity in establishing a monitoring system in terms of five basic steps⁶. These are to:

- (i) Define desired results;
- (ii) Establish predictors of results;
- (iii) Establish standards or budgets for predictors and results;
- (iv) Provide the information & feedback network;

(v) Evaluate information and corrective action.

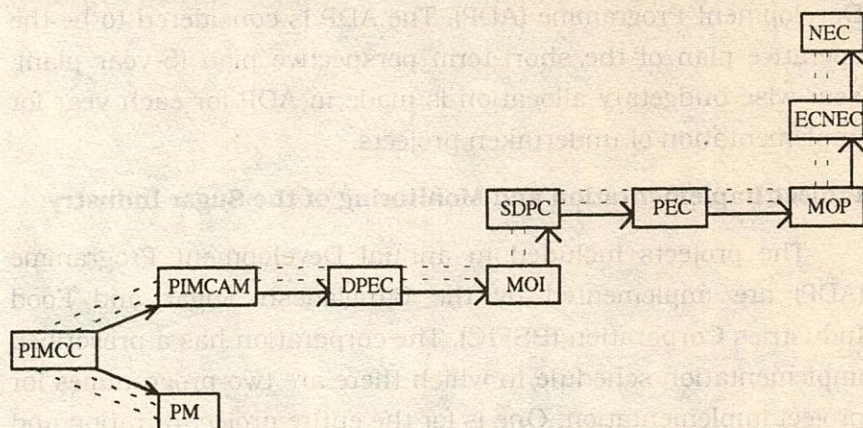
To carry out effective monitoring the above methods can be grouped into one of four categories; pre-action monitoring, steering monitoring, securing monitoring and post action monitoring⁷.

The process to be carried out by the management through out the organisation. Monitoring of financial aspects set the resource limits which managers have to operate. Many monitoring methods involve budgets, review technique and other financial tools. However, monitoring system is not limited to financial aspects only. Human resources are integrally involved in any organisational activities. Therefore, monitoring processes are behavioral in nature. They are delineated to guide individual and group behavior in concurrence with organisational goals and standards. From the above, it is clear that all managers need to exercise monitoring to carry out their activities successfully.

IMPLEMENTATION AND MONITORING OF DEVELOPMENT PROJECTS OF SUGAR INDUSTRY

Development Projects:

The development projects of the sugar industry are mainly concerned with undertaking investment projects. The projects are undertaken by the corporation (controlling unit) through its planning directorate. There are three types of investment projects. These are (i) Sugarcane Development and Training Programme; (ii) Balancing Modernisation Replacement and Expansion (BMRE); and Establishment of New Projects. The government pursues short-term perspective plans for economic growth and development of the industry. Accordingly, the corporation on behalf of the industry undertakes development projects for the industry. There is a prescribed process for undertaking development projects. The step for processing the development projects is represented in chart-1.

Chart-1. Step for Processing of the Development Projects

Source: Bangladesh Sugar & Food Industries Corporation, Dhaka.

Legend:

= Decision making authority;

- - - - = Flow of information data;

—————> = Feedback loop;

PM= Project Management;

PIMCC= Planning Implementation & Monitoring Cell of Corporation

PIMCAM= Planning Implementation Monitoring Cell of Administrative Ministry;

DPEC= Departmental Project Evaluation Committee;

MOI= Ministry of Industries;

SDPC= Sector Division of the Planning Commission;

PEC= Project Evaluation Committee;

MOP= Ministry of Planning;

ECNEC= Executive Committee of the National Economic Council;

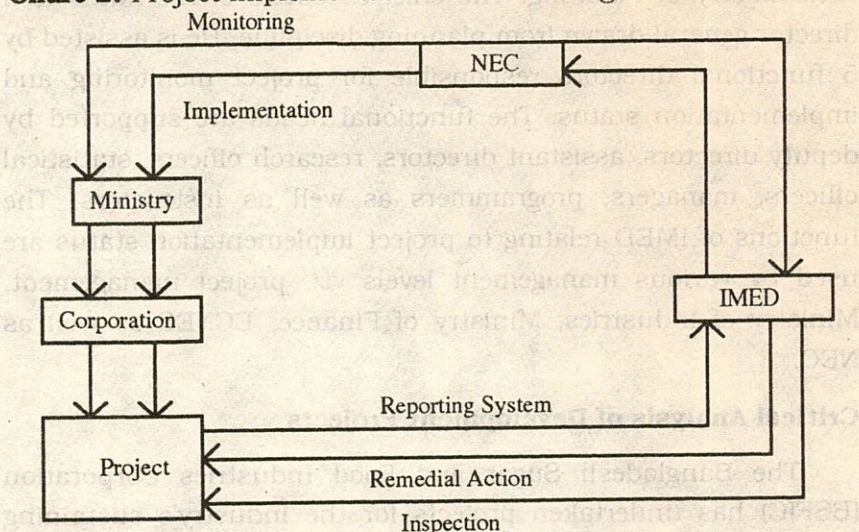
NEC= National Economic Council.

The projects approved are included in the Annual Development Programme (ADP). The ADP is considered to be the operative plan of the short-term perspective plan (5-year plan). Year-wise budgetary allocation is made in ADP for each year for implementation of undertaken projects.

Project Implementation and Monitoring of the Sugar Industry:

The projects included in annual Development Programme (ADP) are implemented by the Bangladesh Sugar and Food Industries Corporation (BSFIC). The corporation has a prescribed implementation schedule in which there are two programmes for project implementation. One is for the entire project duration and another is for each financial year beginning from July 1, each year. The implementation status of the projects are monitored by the numerous management levels such as the project manager, corporation, administrative ministry, minister of finance, planning commission as well as implementation monitoring and evaluation division (IMED).

The corporation and the project manager monitor in-depth project activities. They prepare monthly, quarterly, annually progress reports as well as report on completion of projects for submission to IMED. Besides, the administrative ministry and ministry of finance hold review meeting on the projects, implementation. The minister of planning also holds review meeting when necessary to implement the projects on schedule. The Executive Committee for National Economic Council (ECNEC) and National Economic Council (NEC) hold occasional review meetings on projects, implementation emphasising on expenditure and physical work status of the project. The IMED based upon reports submitted by the project manager and Corporation monitors the projects and inspects the progress reports and data analysis. The IMED also prepares working papers for consideration of the minister of finance, minister of planning, ECNEC as well as NEC. The implementation and monitoring system of a project is presented in Chart-2.

Chart-2. Project Implementation & Monitoring

Source : Bangladesh Sugar & Food Industries Corporation, Dhaka.

Legend:

= Implementation & Monitoring Authority;

—→ = Flow of information data

NEC = National Economic Council;

IMED = Implementation Monitoring & Evaluation Division.

Supporting Organisation for Implementation and Monitoring of Development Projects:

There is a Planning Implementation and Monitoring Cell (PIMC) in each ministry and Corporation. For ministry, the secretary is the controlling officer of the PIMC. The chief of the PIMC is an additional secretary or joint secretary assisted by 6-10 members with knowledge in preparing plan and project management. For corporation, the head of the PIMC is assisted by 5-10 members to planning process and management system. At project level, there is a project manager responsible to the head of the corporation. The manager is helped by the unit managers of various disciplines.

For project implementation and monitoring, there is an Implementation Monitoring and Evaluation Division (IMED) in

the Ministry of Planning. The chief executive of the IMED is a director general drawn from planning discipline. He is assisted by 5 functional directors responsible for project monitoring and implementation status. The functional heads are supported by deputy directors, assistant directors, research officers, statistical officers, managers, programmers as well as instructors. The functions of IMED relating to project implementation status are used by various management levels viz, project management, Ministry of Industries, Ministry of Finance, ECNEC as well as NEC.

Critical Analysis of Development Projects

The Bangladesh Sugar and Food Industries Corporation (BSFIC) has undertaken projects for the industry's sustaining economic development and catering the public demand for sugar. Numerous techniques, have been developed overtime viz. Programme Evaluation and Review Technique (PERT), Learning Curve Method (LCM), Budgetary System etc. But the record of implementation of undertaken projects has been ineffective due to lack of economic and organisational considerations as well as inadequate schedule of implementation of undertaken projects. These lead to delayed implementation of projects resulting in time over-run and cost over-run.

Time Over-run of Completed Projects:

For sustaining growth and development of the sugar industry, the corporation undertakes development projects. The undertaken development projects for the sugar industries during Third Five Year Plan (TFYP) are depicted in Table-1.

Table-1. Projects undertaken during TFYP

Undertaken projects	Completed project	Incomplete project	Spilled Over To FFYP
8	5	3	3

Source : Bangladesh Sugar & Food Industries Corporation, Dhaka.

Note: FFYP= Fourth Five Year plan.

It is seen that 8 development projects were undertaken for the sugar industry during TFYP. Out of which 5 projects were completed leaving 3 projects incomplete which were spilled over to FFYP for implementation. Again, the implemented projects were spilled over from Second Five Year plan to Third Five Year plan. From the above it is clear that the corporation could not implement the project within the specified plant period.

While asked about the factors responsible for delayed implementation of projects, the interviewees replied that the implementation process, was delayed because of number of factors. These are financial, organizational and administrative in nature. Of the various factors affecting project implementation, delay in release of fund deems to be most important for delayed project implementation.

Cost Over-run of Completed Projects:

It is learnt from the corporation that some of the development projects are not completed within estimated cost. Table-2 represents estimated cost and actual cost of the completed projects during Third Five Year Plan (TFYP).

Table-2. Estimated cost and actual cost of completed Projects during TFYP (In Lakh Taka)

Name of the projects	Estimated cost	Actual cost	Difference
Replacement of Deshbandhu Sugar Mills	1698.05	1827.61	+129.56
Sugarcane Seed Multiplication & Research Farm	731.59	804.55	+72.96
Expansion of carew's Distillery.	765.14	759.25	-5.89
Expansion of Mobarakgonj Sugar Mill.	1003.14	869.36	-133.78
Intensive cane Development Scheme (phass-11).	1654.10	1675.62	+21.52

Source : Bangladesh Sugar & Food Industries Corporation, Dhaka.

Note: +sign indicates increased cost over estimated cost;- sign indicates reduced cost over estimated cost.

It is seen in Table 2 that 5 projects have been completed during TFYP. Out of which 3 projects have been completed with above estimated cost and 2 projects have been completed with below estimated cost.

While asked about the cost escalation of completed projects the interviewees referred some factors responsible for cost escalation. Those were general price increase, under estimation of costs, inclusion of new items, change of scope as well as delay in project implementation. Among the factors, increase in price and delay in project implementation were considered most important factors.

Project Monitoring :

Project management of the sugar industry is done according to the government guidelines and directives. Four hierarchical levels of control supervision structure have been observed in the industry (seen in chart-1). These are political, bureaucratic, corporation as well as manufacturing units. The manufacturing units have no policy regarding project monitoring as project monitoring is done by government guidelines as stated earlier. It is seen that there are planning implementation and monitoring cells in the administrative ministry (i. e ministry of industries) and corporation. They prepare reports on project implementation to get the concerned authorities informed about the status of project. But the reports are very infrequently prepared and used for performing management functions. The detailed information on monitoring at the ministerial level and corporation level are generally available after lengthy delays. With a view to prevent overspending, the ministry of finance depends on the detailed system of line item expenditure control backed by strict authorization procedures rather than monitoring expenditure on a broader basis. This system inhibits the delegation of responsibility and accountability to the Administrative Ministry (Ministry of industries) and corporation. The budget system is very inefficient which cannot be used to monitor decisions on

resource flows to the corporation as the system currently focusses more on revenue mobilization than on expenditure priorities. The planning commission is currently responsible for budget allocation for on-going projects but the estimate of costs for budget allocations is updated⁸.

Inspection procedure to some extent can control the capital expenditure but the inspecting team has been given specific job and as such it cannot ensure better control of project cost. From the above discussion it has become clear that the project monitoring of the sugar industry to some extent is inadequate.

Concluding Remarks

Sugar industry plays an important role for the economic development of Bangladesh. For its sustaining economic growth and development, the Government of Bangladesh undertakes a number of development projects in the various plan periods with adequate provision of funds. Analyses of the study is done on the basis of project implementation monitoring and supporting departments of project implementation and monitoring. The major findings of the study are:

(i) The record of project implementation is very poor in the sugar industry. The undertaken projects are seldom implemented within given time and given amount of money. The study reveals that there were 8 development projects in the sugar industry during the TFYP. During the period, 5 projects were implemented leaving the others incomplete. The study also points out that the undertaken projects had undergone time over run and cost over run. These time over run and cost over run of implemented projects creates the social burden instead of easing the people free from economic hardship.

(ii) Regarding monitoring of undertaken projects there are four hierarchical levels in control supervision structure as seen in chart-2. Directives and guidelines are issued by top down approach. The review mechanism had been introduced to control

of project cost based upon report submitted by the monitoring authorities of the projects but seemed inadequate. The budgetary control system is considered inadequate as it does not give priority determination of investment projects. The inspection team had been introduced for timely project implementation. But this system does not contribute much as the team is only given the inspecting function.

From the above findings of the study it may be said that the implementation and monitoring system of undertaken development projects is ineffective.

Based upon the findings of the study. The following suggestions have been outlined for timely implementation and proper monitoring of the undertaken projects.

(i) The industries success by and large, depends upon the efficacious use of the funds available for development projects. The executives interviewed replied that there was continuous imbalance between the allocations and disbursement of funds of undertaken projects in the sugar industry. This results in poor record of projects implementation. Thus, the study suggests that priority projects be determined within the available funds which can help implement the projects within given time and given amount as well as contribute benefits towards the national economy for the people of the country.

(ii) In the sugar industry, there is a four-tier control-supervision management structure (mentioned earlier) which is characterised by inadequate delegation of authority and responsibility among the management people. As a result, the undertaken projects have not been completed within given period and given amount. So, for timely project implementation proper delegation of authority should be ensured so that the management involved in implementing projects is considered responsible and accountable for the delayed project implementation.

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MANAGEMENT OF LEVERAGE A CASE STUDY OF NORTH BENGAL PAPER MILL (NBPM)

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ABSTRACT

The present study reiterates the impact of management of leverage on financial structure, cost of production, liquidity and profitability of North Bengal Paper Mill. N.B.P.M. had been incurring heavy losses since its inception. The study reveals that, their financial leverage was highly adverse as well as the operating leverage. Combined leverage of the mill was also in decreasing position. The C.V.P. analysis portrays that, their P/V ratio was very much negligible. It always failed to reach B.E.P. Liquidity position was adverse in all the time. All of these adverse conditions deteriorated the leverage management of the N.B.P.M.

Introduction :

North Bengal Paper Mill (N.B.P.M.) was established by the East Pakistan Industrial Development Corporation (E.P.I.D.C). It went into trial production in Nov. 1970. But was closed in March 1971 during the liberation war. It remained closed for want of power till it was recommissioned in Dec. 1973. Annual production capacity is 15000 tons. Original investment was TK. 2177.45 lakh comprising of TK. 887.05 local currency and TK. 1290.40 lakh foreign currency. The major sources of financing are Bank Credit, and ADP. The mill had accumulated net loss of TK. 12593.26 lakh at the end of June. 1994¹. Since establishment, there had been heavy losses. This has affected the financial structure of the mill.

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1.1 The Purpose and Objectives of the Study :

The purpose of the study is to analyse the financial leverage of the mill and its impact on ROI during the year 1988-89 to 1993-94. The specific objectives of the study are as follows:

- (a) To analyse the financial leverage and the affecting factors thereon during the year 1989-90 to 1993-94.
- (b) To identify the operating leverage & its limiting factors and to find out the impact of both on business growth.

1.2 Scope and Methodology of the Study :

The scope of the study is limited to North Bengal Paper Mill (N.B.P.M.) only. The empirical analysis of the study covers a period of five financial years ranging from 1989-90 to 1993-94. The main reason for limiting the study is the time and resource constraints, at the disposal of the researcher because the study is self financed.

The study adheres to secondary data. The main sources of secondary data have been Annual Reports, Office Memorandum and Organization Manuals which are collected by the researcher from the head office of the B.C.I.C. and N.B.P.M.

The data and information thus collected have been processed manually. The statistical tools like averages, percentages, ratios co-relation co-efficient and 't' test had been used in the study to make it more informative and analytical to the readers.

1.3 Terms and Concepts :

Leverage plays an important role in the performance of a business. A general dictionary definition of the term leverage would refer to an increased means of accomplishing some purpose². In Business, leverage is a process of conscious risk assumption³. The term leverage is used to describe the firms

ability to use fixed cost assets or funds to magnify the return to its owners⁴. Increasing leverage increases the uncertainty of returns but at the same time increasing the size of the possible return⁵. It is the ability of a business to benefit by obtaining low cost borrowed capital and using it productively to obtain a higher return with the differential benefit to the owners⁶. The amount of leverage on the firms structure greatly reflects the type of risk return trade off it makes⁷. Financial leverage refers to the use of fixed income securities in the capital structure of firm⁸. The use of debt increases and earning on equity so long as the rate of return on the firms investment exceeds the explicit cost of financing the investment. So for the advantage of financial leverage more debt capital is preferable when other factors are constant. Operating leverage measures the operating risk of a firm. It depends on operating cost of a firm. If a higher percentage of firms total cost are fixed operating cost, the firm is said to have a higher degree of operating leverage⁹. If operating risk is high, financial risk should be low. A firm with low operating leverage may have high financial leverage. If both the leverage are high, combined effect would be more alarming. Therefore a well-management of leverage is desired.

Efficient management of leverage ensures the best use of resources to earn profit of an enterprise. Management of leverage includes all policies and approaches to obtain best uses of borrowed capital and thereby enhancing the financial position of the enterprise. In Bangladesh out of three paper mills N.B.P.M. had been incurred the highest accumulated losses¹⁰. As a result their financial structure have totally been destroyed. In this regard the researcher calls for an indepth study into leverage management of N.B.P.M.

1.4 Literature Review :

D.K. Dutta and M.K. Bhattacharjee¹¹ made a study on *"The leverage and EPS: A study of UGSF Ltd."* Their objectives of the study were to measure and analyse the operating leverage,

financial leverage, EPS and impact of leverage on EPS and ROE. The study is also based on secondary data. They saw that EPS under debt plan was greater than that under equity plan. This is due to tax advantage. Changes in EPS and ROE are affected to a very limited extent the degree of financial leverage and debt equity ratio respectively. There might be other related variables responsible for changes in these two indicators of share holders earnings.

M.M. Mahmud and M.K. Bhattacharjee¹² made a study on "A comparative analysis of capital structure of public and private sector manufacturing enterprises in Bangladesh" suggested the systematic management of leverage for optimising capital structure management of leverage of optimising capital structure and ROI of any business.

Solaiman¹³ in a study on "Leverage analysis : A study on some public sector industrial enterprises in Bangladesh" had the objectives to examine the impact of leverage on profitability of the sample enterprises and study the implications of the findings and suggest ways to improve the adverse situation. The study was confined 5 public sector enterprises around Chittagong under BCIC. The study covered the period 1979-88 to. Secondary data were used relating to capital composition, debt position, asset position, profit performance, cost structure and sales position, interest cost etc.. Enterprise Heads were interviewed, to collect necessary data regarding factors influencing use of debt and profit volume. Statistical average, co-efficient of correlation were used for the purpose. He analyzed 4 types of leverage: ROI leverage, operating leverage, financial leverage and combined leverage. He saw that there is scope to develop capital structure, cost structure, profit planning through improvement in financial leverage, Not a single unit follows financial leverage and there is severe difficulty in financial planning and control of the enterprises.

Prof. A.B. Nag¹⁴ in his article on "Operating and financial leverage" highlighted the significance of the two in controlling

cost of capital and ROI of any business enterprises. He suggested to give emphasis on the two in controlling capital structure and financial performance of the business enterprises.

2.0 Findings and Their Analysis :

North Bengal Paper Mill (N.B.P.M.) has been sustaining heavy losses since 1977-78. Accumulated losses of the mill were Tk. 125.93 crore at the end of the financial year 1993-94. Negative equity was Tk. 102.04 crore during the same period. Long term liabilities amounted to Tk 24.18 crore during the said period¹⁵. Because of the accumulated losses the financial structure of the mill has been paralysed. Now the major findings of the study have been analysed under the following subsections:

2.1 Position of Financial Leverage of N.B.P.M. :

Financial leverage occurs when a corporation earns a bigger return on fixed cost fund that it pays for the use of such funds. If the ROI exceeds the rate of interest, a firm has a favourable financial leverage and is in a position to pass some of this advantage to the equity share holders by restoring to borrowings. In other words, when R.O.I. exceeds interest rate, the financial leverage is favourable and the firm is said to be trading on equity¹⁶.

Unfavourable financial leverage occurs when the firm does not earn as much as the funds cost. The degree of financial leverage (DFL) may be defined as the ratio of the percentage change in earnings per share (EPS) available for common stockholders that is associated with a given percentage change in earnings before interest and taxes (EBIT)

$$DFL = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in EBIT}} > 1$$

Now the position of financial leverage is shown in the following table:

Table-1: Table showing the Degree Of Financial Leverage of The North Bengal Paper Mill during 1989-90 to 1993-94.
(In Million Taka)

Particulars	1989-90	1990-91	1991-92	1992-93	1993-94	Average
A. EBIT	(20.23)	(61.80)	(90.93)	(86.96)	(73.28)	(66.58)
B. Interest	46.69	58.23	79.78	54.98	30.74	54.08
C. EBT(A-B)	(66.92)	(120.03)	(170.41)	(141.94)	(104.02)	(120.66)
D. Degree of Financial Leverage (A/B)	0.30	0.51	1.41	0.61	0.70	0.65

Source: Annual Reports of BCIC and the NBPM during the year 1989-90 to 1993-94.

The above table-1 portrays that, EBIT (-66.58) was negative during the study period and EBT (-120.66) was also negative. Both the figures were negative so, there was adverse situation in financial leverage. The average degree of financial leverage (0.65) was also too low. The financial leverage also examined by the interest coverage ratio. The interest coverage ratio (Table-4) was totally negative during the study period but three to four times interest coverage ratio is considered normal by financial expert to provide protection of interest holders and safeguard for the enterprise to pay the debt interest¹⁷. Thus, it can be concluded that use of debt is risky both for the industry and the creditors.

Against this back drop, the following section will examine the position of operating leverage of N.B.P.M.

2.2 Position of Operating Leverage of N.B.P.M. :

Operating leverage takes place when a change in revenue produces a greater change in EBIT. More specifically, given a fixed operating cost, fluctuation in revenues will cause greater swing in operating profit¹⁸. Degree of operating leverage may be defined as the percentage change in operating income (EBIT) that takes place as a result of a percentage change in sales volume. It can be measured as follows :

$$DOL = \frac{\text{Percentage Change in Operating Income}}{\text{Percentage Change in Sales Volume}} > 1$$

The higher the degree of operating leverage, the greater is the degree of operating risk and vice-versa. Therefore, when revenues begin to fall the possibility of operating loss increases. As a result, no firm likes to operate under conditions of high operating leverage because, it creates high risk situation¹⁹. Now the following table will examine the position of operating leverage:

Table-2: Table showing the Degree of operating leverage of The North Bengal Paper Mill during 1989-90 to 1993-94

(In Million Taka)

Particulars	1989-90	1990-91	1991-92	1992-93	1993-94	Average
A. Net Sales	411.89	382.14	374.48	448.90	469.57	417.40
B. Operating Profit	(22.04)	(63.34)	(91.87)	(88.02)	(74.73)	(68)
C. Change in Sales Volume%	-	(7.22)	(2.00)	19.87	4.60	
D. Change in Operating Profit	-	(187.38)	(4.50)	4.19	15.10	
E. Degree of Operating Leverage D/C.	-	25.95	2.25	0.21	3.28	7.92

Source: Annual Reports of BCIC and N.B.P.M. during the year 1989-90 to 1993-94.

Note: Figures in the parenthesis indicate negative position.

The table-2, shows that there was decline in sales value in 1990-91 and 1991-92. Operating profit of the will was always negative during the study period. The degree of operating leverage was 25.95, 2.25, 0.21, 3.28 during the year 1989-90 to 1993-94 respectively and on an average it was 7.92 during the study period. The highest DOL was in 1990-91, and the lowest was in 1992-93. The DOL has widely fluctuated from year to year. The reason for the highest DOL (25.95) in 1990-91 was

Table-3: Table showing the Degree of Combined leverage of The North Bengal Paper Mill during 1989-90 to 1993-94.
(In Million Taka)

Particulars	1989-90	1990-91	1991-92	1992-93	1993-94	Average
A. Degree of operating leverage	-	25.95	2.25	0.21	3.28	6.34
B. Degree of financial leverage	0.30	0.51	1.14	0.61	0.70	0.65
C. Degree of combined leverage (AXB.)	-	13.23	2.57	0.13	2.30	3.65

Source: Annual Reports of BCIC and the N.B.P.M. during the year 1989-90 to 1993-94.

The table-3 depicts the size and degree of combined leverage of N.B.P.M. during the year 1989-90 to 1993-94. It also shows that combine leverage was 13.23, 2.57, 0.13, 2.30 during the year 1990-91 to 1993-94 respectively. And on an average, it was 3.65. The table-3 also reveals that, average degree of combined leverage (D.C.L) (3.65) was closest to average degree of operating leverage (D.O.L) (6.34) but not to average degree of financial leverage (D.F.L) (0.65). It also shows that degree of operating leverage (D.O.L) was high and degree of financial leverage (D.F.L) was nearer to 1.00 and the degree of combined leverage (D.C.L) followed degree of operating leverage (D.O.L). Thus it can be concluded that, low degree of financial leverage (D.F.L) badly affected the capital structure and as a result N.B.P.M's return on investment (R.O.I) (14.4) (table-4) becomes negative.

Now, it is necessary to evaluate the financial position of the N.B.P.M which is discussed in the next section.

2.4 Financial position of the N.B.P.M. :

Financial position plays a basic role in the total advancement of a company. Sound financial position enhance the growth of a company whereas, bad financial position enhance the destruction of a company. A company operated under a sound financial position may take well financial policy for its well-being. Good management of leverage also to some extent depends on the good financial position of a company. If the EBIT of a company is negative, return on investment (R.O.I) is negative,

sales revenue is low then financial position as well as leverage management would be affected.

Against that back-drop now let us analyse the financial position of the N.B.P.M. which is shown in the table no-4.

Table-4: Financial Indicators of the North Bengal Paper Mill during the year 1989-90 to 1993-94

(In Million Taka)						
Particulars	1989-90	1990-91	1991-92	1992-93	1993-94	Average
1. Gross Profit (loss) to sales(%)	(1.94)	(12.73)	(20.22)	(15.88)	(12.02)	(12.56)
2. N.P. (loss) to Sales (%)	(4.91)	(16.17)	(24.20)	(19.37)	(22.15)	(17.36)
3. Gross Profit (loss) to total asset (%)	(0.01)	(0.07)	(0.12)	(0.13)	(0.11)	(0.09)
4. N.P. (loss) to total asset(%)	(0.03)	(0.09)	(0.17)	(0.14)	(0.21)	(0.13)
5. R.O.I (%)	(10)	(19)	(17)	(13)	(13)	(14.4)
6. Current ratio	0.36	0.34	0.27	0.23	0.19	0.28
7. Liquid ratio	0.16	0.11	0.07	0.06	0.06	0.4
8. Inventory turnover (Times)	2.23	1.66	1.60	2.23	2.72	2.09
9. Current Assets turnover (Times)	1.25	1.11	1.19	1.65	1.91	1.42
10. Fixed Assets turnover (Times)	1.12	1.12	1.22	1.65	1.83	1.39
11. Capital Employed turnover (Times)	(1.96)	(1.16)	(0.69)	(0.68)	(0.60)	(1.02)
12. Debt equity ratio	(0.57)	(0.45)	(0.30)	(0.28)	(0.24)	(0.37)
13. Interest Earned ratio	(0.43)	(1.06)	(1.14)	(1.58)	(2.38)	(1.23)

Source: Annual Reports of B.C.I.C and N.B.P.M. during the year 1989-90 to 1993-94.

Note: 1) Figure in the parenthesis indicate negative position.

2) Calculation have been made by the researcher.

Table-4, portrays the financial indicators of N.B.P.M during the year 1989-90 to 1993-94. Financial evaluation of the firm shows that, its average liquidity position was very much adverse

during the period. Average current ratio was 0.28 during 1989-90 to 1993-94. Average liquidity ratio was simply 0.4 during the same period. There was decline in turnover of inventory, current asset, capital employed etc. during the study period. Average profitability indicators were very much alarming in all of the years under study. Average gross margin to sales was 12.56 (negative) and average net margin to sales was 176.36 (negative) during the period. Average Debt-equality ratio was negative (-0.37), average Interest-earned ratio (-1.23) was also negative during the study period. This was the basic hindrance on the way of Leverage Management of N.B.P.M.

Financial position of the NBPM was also evaluated by the cost-volume-profit relationship which is shown in appendix-1. The details of cost-volume-relationship reveals that P/V ratio was very much negligible and it was negative in 1991-92. In no year the company could attain Break even point. Expected Break even sales volume was around 200 per cent of the actual sales in particular year while, in other years it was 5 to 7 times of the actual sales. This created a greater pressure on leverage of the company.

Now, against this details backdrop our next section will examine the flaws involved in management of leverage of N.B.P.M.

3.00: Flaws Involved in Management of Leverage of N.B.P.M. :

Leverage Management of N.B.P.M. is not out of flaws. After analysing the above sections regarding management of leverage of N.B.P.M. the following flaws have been observed:

- a) In case of public sector enterprises in Bangladesh, the official prescription for debt equity was 50:50, most of the enterprises could not maintain this ratio and they suffered from unfavourable capital structure²². This is also true for the N.B.P.M. and their debt-equality ratio was negative (-0.37) (table-4) which seriously hampered the leverage management of N.B.P.M.

- b) High fluctuations have been observed in the sales revenue and operating profit which certainly affects the leverage of N.B.P.M. It was revealed that, in a particular year for a low (7.22%) drop in sales revenue, there were bigger (187.38%) drop in operating profit (table-2) and degree of operating leverage (D.O.L) was also highest (25.95). This is so because of the high fixed overhead and low selling price of N.B.P.M. 's product.
- c) N.B.P.M. could attain 88.57 percent of target production during the year 1989-90 to 1993-94 (appendix-2). Average production volume was 10,806 M.T. against the average target production of 12,200 M.T. Actual achievement was 80 per cent in the year 1991-92 and 96.43 per cent in 1993-94. This shortage in actual production enhanced the unit fixed cost and affected the operating leverage.
- d) The difference between the cost of production and selling price was very adverse. Average loss per ton was 8,972 million taka during the study period (appendix-3). Average cost of production was 47,447 million taka as against average selling price of 38,472 million taka per ton during the year 1989-90 to 1993-94. Such an alarming difference between the sales price and production cost deteriorated the leverage management of N.B.P.M.
- e) The negative co-efficient of correlation (-0.20) (appendix-4) between R.O.I. and Debt-equity ratio reiterates that R.O.I. is inversely connected with debt. Moreover, 't' test also found insignificant (appendix-4). Thus it can be inferred that the more debt the less the return to the equity holders. In the other word, the implication is that leverage do not have proper impact on profit earnings of the mill.
- f) Last but not least, average interest coverage ratio (-1.23) (table-4) the mill was too much unfavourable and consequently leverage management have been effected to a greater extent.

4.0: Concluding Remarks :

Leverage management is the key to short-to-intermediate-term decision making in today's dynamic business environment. In the financial planning and control leverage is an important technique in the hands of decision maker²³. Financial planning and control in case of Public Sector Enterprises had been poor for a number of problems which have produced adverse impacts on the performance of these enterprises and thereby indicating poor profitability in these cases²⁴. In case of N.B.P.M. leverage management have been ineffective due to some deficiencies encountered therein and as a result financial performance of the mill is deteriorated to a greater extent.

Un-usual cost of production, imbalance sales price, chronic net losses, adverse debt-equity position and other operational inefficiency are the sine-qua-non of the N.B.P.M's distortion of leverage management. So, without any delay mill management should try to control the cost of production and thereby make the prices of paper competitive to earn more revenue so that, it helps to make the leverage management efficient. Once there is good margin it would be convenient to use the financial and operating leverage for the maximization of earnings through reducing average cost of capital.

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Appendix-1 Cost Volume Profit Relationship of The North Bengal Paper Mill during the year 1989-90 to 1993-94
(In Million Taka)

Sl. No.	Particulars	1989-90	1990-91	1991-92	1992-93	1993-94
1.	Sales	411.89	382.14	374.48	448.90	469.57
2.	Variable cost	356.47	381.49	389.87	404.57	414.09
3.	Contribution (1-2) Margin	55.42	0.65	(15.39)	44.37	55.48
4.	Fixed Cost	87.22	80.15	79.79	84.46	93.60
5.	Profit (loss)	(31.80)	(79.5)	(95.18)	(40.13)	(38.12)
6.	P/V Ratio (3/1)	0.31	0.002	(0.04)	0.10	0.12
7.	B.E.P. (In Tk.)	670.92	40,075	(1994.75)	844.60	780
8.	Margin of satisfy (1-7)	(259.03)	(39692.86)	(2369.23)	(395.60)	(310.43)

Source: Annual Reports of BCIC and N.B.P.M. during the year 1989-90 to 1993-94.

- Notes:**
1. Figures in the parenthesis indicate the negative position.
 2. Calculations have been made by the researcher.

Appendix-2 Achievement of Target Production of The North Bengal Paper Mill during the year 1989-90 to 1993-94.
(M. Ton)

Year	Target	Actual	% of Actual production on Target production
1989-90	13000	11530	89%
1990-91	12000	9871	82%
1991-92	12000	9622	80%
1992-93	12000	11435	95%
1993-94	12000	11571	96.43%
Average:	12200	10806	88.57%

Source: Annual Reports of B.C.I.C and N.B.P.M. during the year 1989-90 to 1993-94.

Appendix-3 Cost of production, Sales and profit and Loss of The NBPM during the year 1989-90 to 1993-94

(M. Ton)

Year	Cost of production (per ton)	Sales price (per ton)	Profit (Loss)
1989-90	41573	35723	(5850)
1990-91	46702	38713	(7989)
1991-92	54101	38919	(15182)
1992-93	50968	39253	(11715)
1993-94	43876	39753	(4123)
Average:	47444	38472	8972

Source: Annual Reports of B.C.I.C and N.B.P.M. during the year 1989-90 to 1993-94.

Note: Figure in the parenthesis indicate the negative position.

Appendix-4 Table showing the co-efficient of Correlation of the D/E ratio and R.O.I.

Particular	Correlation co-efficient	Figures of 'T' Test
D/E ratio and R.O.I.	-0.20	Not significant

Source: Compiled from annual reports of BCIC and N.B.P.M. during the year 1989-90 to 1993-94

Note: Calculation have been made by the researcher.

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