バングラデシュ農業普及計画
専門家(農業普及)総合報告書

昭和52年 9月

国際協力事業団
農業開発協力部

ま　え　が　き

１９７５年８月１５日から繰返された政変劇によるバングラデッシュの政情不安は、ＣＥＲＤＩに対する無償援助をおくらせることになってしまった。

技術協力はそのあおりを食い、更に建物の建築や圃場整備のかげに追いやられたような恰好になり、カウンターパートも現地側の都合ですっきり出来ないまま、任期を終えることになってしまったが、私はバングラデッシュにおける普及事業の現状を知ることと、ＣＥＲＤＩの実験村として選ぶべき部落の選定及び選定した部落の実態調査等を行いＣＥＲＤＩ 発足後に備えて、その準備を整えることにしたので、その結果をとりまとめて報告することにした。

普及事業に関しては、さきに発行された普及の手びきに詳しく述べてあるので、重複をさける意味で省略した点もあることをことわっておきたい。バングラデッシュ在勤中、現地大使館の皆様、事業団事務所長、チームリーダーはじめ専門家各位，ならびに本国の関係各位から温い御支援と御指導を頂きました。心から感謝の意を表します。

福　里　藤三郎

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－付　録－

－参考資料－

I. SOCIO-ECONOMIC ASPECTS, From "Agriculture in East Pakistan" by KALIMUDDIN AHMED, 1965.

1. 自　然

1－1　地　形

バングラデッシュは北緯20.5°から26.5°、東経88.5°から92.5°の間にある約55,000平方哩（141,000㎢、3,500万エーカー）で北海道の1.8倍にあたる。国土の大部分が、ガンジス、ブラマプトラ、メグナ及びそれらの支流による世界最大の沖積デルタ地帯である。国の東南部のチッタゴン東、東北部のシルエットやマイメンシンなどの地に、わずかに山や丘陵がみられるものの、ほとんど高低の乏しい平野からなり、国土の90％近くは海抜150ft（49m）以下の平坦地である。

農業は国土の63％にあたる2,200万エーカー（888万Ha）の平地の上に、多くは大河の洪水の影響をうけながら営まれている。

1－2　地理的区分と土

バングラデッシュはその87％が平坦なデルタであり、わづか13％が丘陵的地形であるが、地理的には次の3区分にわけることができる。

1－2－1　第3紀丘陵地

国の東南部のチッタゴン丘陵ないし山岳地帯及び東北部のシルエット丘陵がこれに含まれる。土質は主として第3紀砂岩と頁岩から成っているが、シルエット丘陵の一部は洪積紀の沖積物をかぶっている。土壌はラテライト化していて、表面は灰色か赤褐色を帯び、漂白された含水酸化粘土となっている。置換性塩基と可溶性養分に乏しく、一般に生産力は低い。一部には原住民族による焼畑耕作が行われている。

1－2－2　洪積紀台地

西部のBarind段丘と中央部のMadhupur tract（通称ジャングル）が代表である。雨期にも水没せず、地質材料からしても浸食に強い。Barind段丘の底床は粘土を含む硬い淡赤または褐色の土で、風化すると黄味をおびてくる。豆石状土壌はチッソ、リンサン、カルシウムに乏しく、PHは6～6.5程度である。一般に雨期の降雨に依存するAman稲の作付が多い。Madhupurに現在ではかなり開拓されている。土壌は赤色ラテライト、粘土質で、鉄、アルミナに富む。チッソ、リンサン、カルシウム及び有機質に乏しい。PH5.5～6.0でリンサン吸着力が強い。

1－2－3　近世氾濫平原

新デルタ地域に当る地域で、国の総面積の７０％を占め、北から南に向ってゆるやかに傾斜し、広漠単調なこの国の地形を特徴づけている。平坦低地のため、この地域の大部分は、雨期に各河川の溢流により水没する。氾濫平原は６区に分けられると云われているが、その主なものは次のとおりである。

Piedmant 沖積平原は国の西北部の沖積平原（Dinajpur, Rangpur）で土壌は砂質ロームであり、耕転は比較的容易である。主要作物は稲、甘蔗、タバコである。

シルエット低地は東北部に横たわる低地で、その中心部は海抜３ｍ程度にすぎず、１年のうち７ケ月は湖に変じてしまう。乾期稲作の中心である。

Tippera Surface はコミラ、ノアカリー両県にまたがる粘土平原で、Aus、Aman 及び Jute の栽培が多い。

チッタゴン沿岸平原はベンガル湾沿いの帯状地帯であり、潮汐の影響で塩基性土壌となっている。

１－２－４　土壌区分

土壌は次の７地域にわけることも出来る。

(1) Brahmaputra alluvium

コミラ、ノアカリー、チッタゴン及びシルエット（共に丘陵地帯を除く）、ダッカ、ムシガンヂー、マドプールトラクト（Madhupur tract）の一部を除くマイメンシン及ナラゴンガンヂーの地域。

土壌は肥沃で年々の洪水で運ばれる silt の新しい沈積で再生されている。米、Jute が主要作物で、あらゆる作物が育つ。

PH 5.5～5.8 で、この地域は１６,０００平方哩に亘る。

(2) Gangetic alluvium

ダッカのマニクゴンジー、ファリドプール、ヂエソール及びクスチア、パアブナ、ライシャヒ、バリサル及びクルナ等、ガンジス河沿いの平原で土壌は多量のカルシウムを含む。Clay loam から light loam に分れている。

PH 7.0～8.5 で、この地域は１０,６００平方哩に亘る。

(3) Teesta silt

タクルガオン、及びヂナプールサブディビジョンの中心部、ラングプール、ボグラの一部（Karotoa 河の東側）及びパブナのシラヂゴンヂー地方。

殆んど Sand loam から成る。PH 6.0 ～ 6.5。

主要作物は稲、甘蔗、タバコである。

この地域が6,500平方哩に亘る。

(4) Madhupur tract

ダッカの中央 sub-division の北部、タンガイル、sub-division の東部、マイメイシンの中央 sub-division の南西部で通称 Madhupur Jungle tract で知られている地域で赤色ラテライト。Amanの栽培が多い。重粘土壌でチッソ、リンサン、カルシウム及び有機物に乏しい。鉄、アルミナの集積が多く、リンサン吸着力が強い。PH 5.5～6.0。

この地域は4,000平方哩に亘る。

(5) Barind tract

ディナヂプール、sub-division の南部、Korotoa 河の西側に当るボグラの一部、ナトール、ナオゴアン及びライシヤヒ、ナクブガンジー sub-division の一部。

古い沖積層で、淡赤か褐色の陶土層からなり、風化すれば黄色に変ることがある。チッソ、リンサン及びカルシウムに欠ける。

PH6.0～6.5。この地域は5,000平方哩に亘る。

(6) Saline tract

クルナの Satkhira 及び Bagerhat sub-division、バリサルの Patuakhali、及び Bhola sub-division、ノアカリ及びチッタゴンの島々及び沿岸地方。

この地域は平坦な低地及び新しく形成された土地から成り立っている深い森林に覆われる。塩沼で多くは塩の結晶が出ている。カリ及びリンサンを含む。

Saline tract は 6,000平方哩に亘る。

(7) Hill tract

主として Chittagong Hill tract 及び Mymensingh Garo hills で地域は7,000平方哩に亘る。Chittagong Hill tract は細い砂の混った固い赤色粘土である。全般に土壌痩薄である。原住民族による焼畑農業も行われている。

1—3 気　象

1－3－1 気　候

気候は典型的なモンスーン型であり、３～５月の夏期又はノールウエスタン期、６～１０月の雨期又はモンスーン期、１１～２月の乾期又は冬期に分けられる。

又一般的に６～１０月の雨期と１１～５月の乾期に分ける熱帯的区分もある。雨量は平均 Sylhet の4,040㎜を最高に、西北部の Rajshaki では1,430㎜、Dacca では1,800～1,900㎜と地域によって異るが、一般に東部及び南部の地方でやや多く、西部に少なく、農業生産もこれに影響されている。

年間の雨量分布は３～５月のノールウエスタン期に１９％、６～１０月のモンスーン期に７８％、１１～２月の乾期に３％と、その８割がモンスーン期に集り、特に６～８月に集中的に降り、１０月に入ると激減し、１１～２月の乾期中には降雨は殆んどなく、穏やかな乾燥した天気が続く。ノールウエスタン期からモンスーン期にかけてサイクロンが数回発生する。物すごい降雹もあり、農作物、人畜、家屋に大被害をひきおこすことがある。

１－３－２　気　　温

気温はノールウエスタン期に入れば上昇し、３月、４月と急激に上って４月には年間の最高気温を記録するようになる。

雨期には最高平均３３.７℃、最低平均２２.６℃で、６、７、８月は日本の盛夏と同じくらいの暑さである。気温は別として８０～１００％に達する湿度のため不快指数は極点に達する。

９月に入れば Second summer と称して又暑くなるが、１０月～１２月は暑くもなく、寒くもない、よい気候である。

冬期の最高平均２６.８℃、最低平均１３.８℃である。とくに１～２月は一番気温の低い時期で、早朝の外温１０℃以下になることもあり、セーターなしでは寒い。勿論、夜間も毛布一枚ではすごされない。しかし、日中はカッターシャッツ一枚でよいほどである。

雨期のうんざりさせられる高温度にひきかえ、乾期はカラッとした上天気が続く快適な国である。主要地点の月別平均気温は次の通りである。(℃)

第1表

	Chittagong	Mymensing	Dacca	Jessore
1月	19.1	19.0	19.1	18.6
2	20.3	19.5	20.3	20.0
3	25.0	25.0	26.1	23.8
4	27.0	27.0	28.2	29.0
5	27.5	27.5	28.2	29.0
6	27.5	27.5	28.8	28.8
7	27.0	28.2	28.8	28.2
8	27.0	28.2	28.2	28.2
9	27.5	28.2	28.8	28.2
10	27.0	27.0	27.5	27.0
11	23.0	23.0	23.0	22.6
12	19.5	19.1	19.5	19.5
年平均	25.0	25.0	23.8	23.8

2. 農　業

2－1　農業人口

1960年の農業センサスによれば、農業人口は約6,000万、総人口の80％をしめる。農家戸数614万戸、人口の90％以上、7,000万人が農村に住んでいる。そのうち20％は農村に全く土地を持たず、その割合は年々増加しているといわれていた。1968年の調査では、農家戸数687万戸になっている。土地をもたない農民も30～40％に増加し、人口の増、均分相続と相俟って、経営の細分化が進んでいる。

2－2　主要作物と生産量

主要作物は稲で全耕地面積の78％を占めている。次いでジュートの7％、甘蔗の1％が主たるものである。

稲作は Aus（春稲）、Aman（夏稲）、Boro（冬稲）の3種に分けられるが、Aman が60～70％を占め、Aus が20％台、乾期冬作の Boro は、面積では 10～15％であるが、収量的には20％を占めている。全耕地面積 2,240 万エーカーのうち、2,000 万エーカー近くの土地は、6～10月には洪水の影響を受ける。稲の多毛作に用いられる土地は 260 条エーカーにすぎない。全作付面積 3,284 万エーカーで、土地利用率は 146 ％となっている。耕作地のうち、61％は一毛作、34％が二毛作、5％が三毛作とされている。Rainfed area に対する灌慨施設の増加につれ、二毛作、三毛作の比率が高まるであろう。

1965～66年及び1969～1970年にわたる10年間の平均からみれば、国内総生産（GDP）に占める部門比率は、農業59％、工業7％、サービス業34％である。農業生産59％のうちで、4％は主要農作物であり、うち米は28％である。これに対し、畜産や漁業は5～6％、林業に至っては1％にすぎない。

この国の農業生産としては、当面とくに穀物生産を増大することが必要である。これは、年間150～200万トンの食糧輸入を余儀なくされている現状からみても当然の要求である。しかし、農業労働の生産性や1人当りの所得は、他産業部門に比して低く、今后農業部門への資本の増投、これを高い生産に結びつける技術の導入と普及への諸対策が必要である。

上記期間の1ケ年平均主要作物の生産は次の通りである。

第1次5ケ年計画書（1965／66 ～ 1969／70）

第２表

作　物　名	面　積　10万 acre	生産量　10万 ton	単位収量　ton/ acre	ton/Ha
米	239.20	107.00	0.447	1.1
小麦	2.15	0.69	0.320	0.8
馬鈴薯	1.80	6.55	3.640	9.1
甘蔗	4.21	75.25	18.000	45.0
Oil Seed	8.15	2.61	0.320	0.8
Pulses	8.68	2.61	0.300	0.8
Jute	23.00	11.90	0.517	1.3
Tobacco	1.12	0.33	0.296	0.7
Tea	0.99	0.29	0.293	0.7
その他	18.88			
全作付面積 Burto	307.98			
〃　net	224.28			

2－3　農作物の流通

市場は次の３つのタイプに分れる

(1)　第一次市場 …… 村のバザール

(2)　第二次市場 …… 町のバザール

(3)　最終市場 …… 港

ジュート以外の農産物は村のバザールにおける物々交換や、仲買人の手を経て、町のバザールを通じて流れるのがほとんどである。

農村では定期的に週１～２回のバザールが開かれる。道路沿いで毎日開かれるところもある。農民は、これら第一次市場迄の運搬を、自転車、人力車、牛車、舟などで行い、殆んどの農産物をこれらの市場で売る。第二次市場で販売する農家は極くまれである。大きなバザールは必ず河沿いにある村の中心地に開設され、舟による大量の物資の運搬が行われている。第一次市場に集められた農産物の大部分は、牛車、トラック、舟などによって、第二次市場、

即ち、大きな町にある常設の卸売市場、集荷市場に持ち込まれ、中間商人や、精米加工業者の手を経ながら、消費ルートに乗って、町の消費者に渡る。第一次買付人である Faria 及び Repari から集荷業者 Aratdar、中間商人 Balal を経て、倉庫業者、卸売人、小売商人の手を通って消費者に流れる。

ジュートのような特殊なものについては、仲買人が農家の庭先に直接くるものもある。

2－4　村落と共同組合

部落（Village 又は Para）は浸水をさけるため、田面より３０～４０㎝の高さに土を盛りあげて作られた転在する集落から成り立っている。

集落は家族集団で成り立っているものが多い。１－２の Village で Mouza を形成している。１例を示すと、Mouza Uttar Salna（北サルナモウザ）は２village から成り立っている。Union Kaultia は 19 Mouza－32 Village から成り立っている。Union を村と呼ぶならば Mouza は区、Village は部落ということになろう。

農業共同組合は、現在のところ、政府の指定を受けた地域だけにつくられている。農業アカデミーのあるコミラ県の各 Thana はそのモデルと云えよう。この組織の下にある農民は、ごく一部にかぎられ、全体の９０％は組合に所属していないといわれている。Thana（郡）段階の Thana Co-operative Association（T.C.C.A）は郡農協連合会で、一応、普及、農機具、信用、購買、販売、婦人啓蒙の部門をもっていることになっているが、全部門が活躍しているわけではない。週一回づつ部落単協の chairman、model farmer 等に対する集合研修と婦人啓蒙運動は行われている。部落単協は日本の部落の生産組合といったところであるが組合としての生産活動は見られない。所要肥料、農薬等を単協でとりまとめ、U.A.A. を通して Thana につなぐことになっているが、U.A.A と単協のつながりも名目的にすぎないようである。

3. 普及事業の現状と問題点

バングラデッシュは総面積 55,000 平方哩、人口 7,400 万、世界中で最も人口稠密な国の一つである。人口の９０％あまりは農村に居住し、７５％以上の者が農業に従事している。土地利用率は６５％に及び、世界中で最も利用率の高い国の一つである。耕地面積 2,240 万エーカー、作付率１４６％、主作物は稲で作付面積の８０％を占めている。圧倒的な農業国でGDP の約 60％、総輸出の８０％以上を農業で占めている。

国民１人当りの所得は１００ドルにとどかず、世界中で最も低い国の一つである。国民の約８０％は文盲といわれている。

１人当りカロリー摂取量は 1,800 カロリー、平均１戸当耕地面積 2.5 エーカー、land-less farmer ３０％とされている。

人口の増加率３％に対し、農業生産の増加率 2.5 ％で、十分な食糧を供給することができず、年間１５０～２００万 ton の食糧輸入を余儀なくさせられて来た。

政府は第一次５ケ年計画にあたり、農業の開発、農村問題を最優先にとりあげ、食糧生産の自給を計り、地方労働者に雇傭の機会を与え、最低基準の食糧確保ができるようにしようとした。この目的を達成するために、普及事業の強化をはかる必要を認め、諸種の施策を講じようと努力している。

ここでは、これらの経緯をふまえながら、普及事業の現状と問題点を考えてみることにしたい。

3－1　普及事業の沿革

１９４７年、東パキスタンになってから、Directorate of Agriculture の組織は、各 Division (4)に Deputy Director を置き、District (19)に一人づつの District of Agricultural Officer を配置し、その下に農業の Superintendent と Demonstrater を置いた。

これより先、１９４６年には Directorate of Jute Regulation は Directorate of Agriculture に合併され、2,500 人の field worker が一緒に吸収されることになった。

１９５３年に Directorate of Agriculture は

(1)　Directorate of Agriculture and Rural Reconstruction と

(2) Directorate of Agricultural Research

の２部門に分れた。後にこれは再び Directorate of Agriculture に統一された。

１９５６年に Directorate of Agriculture は廃止され、Directorate of Agriculture Extension and Rural Development が設立された。

１９５９年、Directorate of Agriculture Extension and Rural Development は廃止され Directorate General of Food and Agriculture が創設された。

１９６２年 Directorate General of Food and Agriculture は廃止され Director of Agriculture East Pakistan が設置された。

当時の組織は次に示すとおりで、ほぼ現在迄うけつがれている。

Division 担当の Deputy Director	(4)
District 担当の District Agricultural Officer	(18)
Sub-Division 担当の Sub-divisional Agricultural Officer	(54)
Thana 担当の Thana Agriculture Officer	(411)
Union 担当の Union Agricultural Assistant	(4,053)
Village	(62,370)

１９７０年 Directorate of Agriculture Extension and Management が設置され、現在に至っている。

１９７６年、Division の Deputy Director は Regional Director に改め、普及管理局の Additional Director と同格とした。又、District Agricultural Officer も Assistant Director と同格に改められた。

３－２　普及組織

農業省に普及管理局が設置されたのは、さきに述べたとおり１９７０年である。現在、普及の系統は普及管理局長に直属し、Division に Regional Director （４名）、District に District Extension Officer （D.E.O.－２０名）、Sub-Division (67) に Sub-Division Agriculture Officer (S.D.A.O－現員９４名)、Thana(413) に Thana Extension Officer (T.E.O －現員１５８名)、Thana Agriculture Officer (T.A.O －現員５１７名）と Union（４４５０）に Union Agriculture Assistant(U.A.A．－４５００名）が配置され、系統的な組織ができている。

従来、普及管理局にはAdditional Director Extension と Additional Director Training and Education の２名が置かれ、その下に夫々１名のAssistant、Directorを置いて、普及と研修、教育を分担していたが、１９７６年１０月から、待遇改善と一部機構改革が行われ、Division の Deputy Director は Regional Director とし、Additional Director と同格とした。

Additional Director は Education and training の１名だけを残した。普及管理局には、その下にAssistant Director Extension と Assistant Director Training が置かれ、普及と、教育、訓練の業務を分担している。

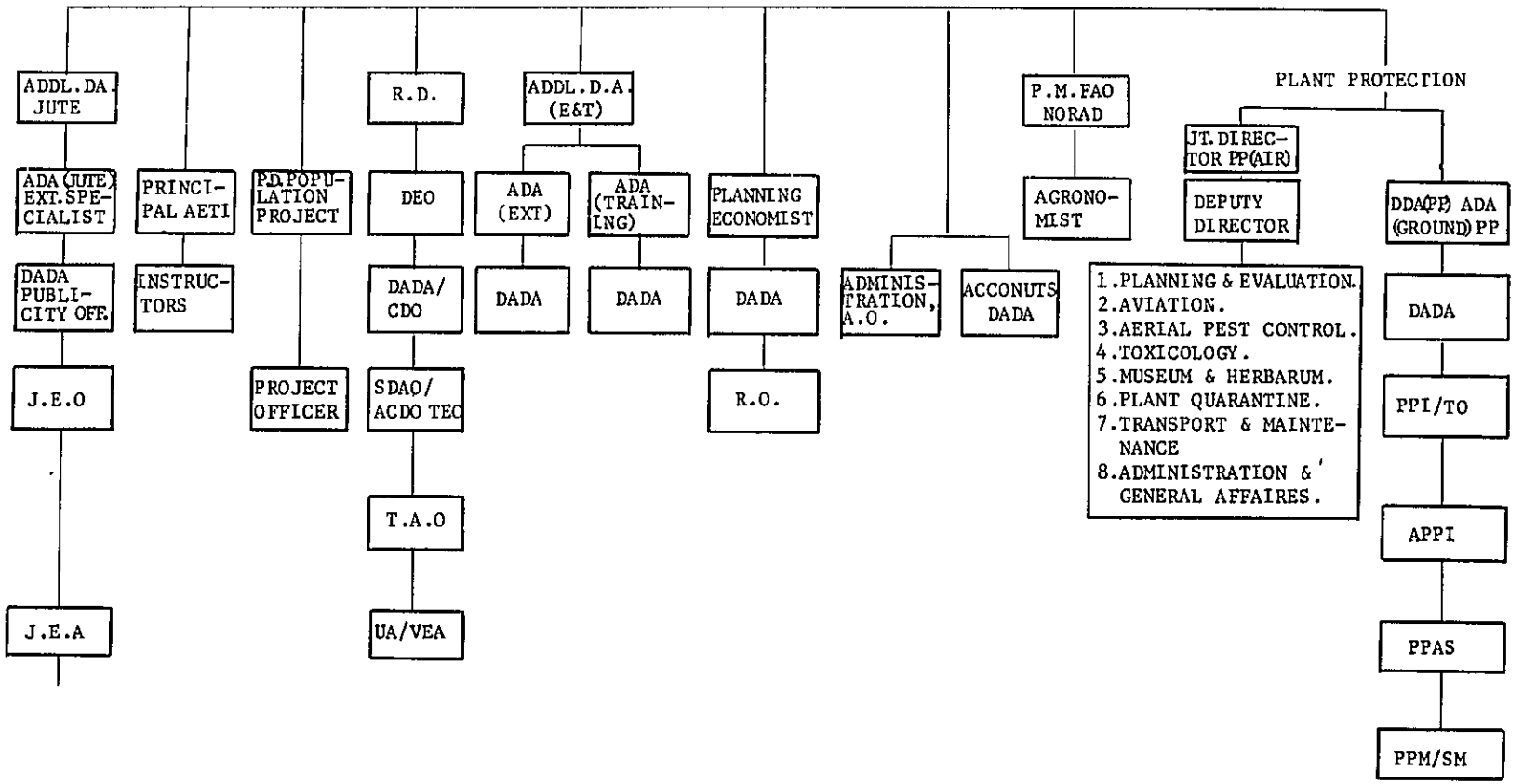
District Extension Officer は Assistant Director と同格に昇格させた。

普及管理局に所属する協力機関としては Plant Protector と Soil Fertility があるが、Plant Protection は Deputy Director P.P. の配下に Plant Protection Inspector が置かれ、D.E.O. を援助し、Thana 段階には Plant Protection Assistant が配置され、病虫害防除面を担当している。Soil fertility は Scientific Officer Soil Fertility ２０名が D.E.O. を援助している。

普及機構、組織は別図－１の通りである。

図 — 1 ORGANIZATION CHART

DIRECTORATE OF AGRICULTURE (E & M)



3－3　普及の実態

3－3－1　普及主体の実状

県の指導官（D.E.O）、郡の指導官（T.E.O）は、農業大学卒の普及専任官である。普及に関する指令は農業普及管理局から各省の Regional Director、各県の District Extension Officer、各郡の Thana Extension Officer を経て、Union Agriculture Assistant（U.A.A.）に伝達されるしくみになっている。行政機構上 District と Thana の間に Sub-division が存置され、通常6～7 Thana を管轄し、Sub-division Agriculture Officer（S.D.A.O）が、担当Thana に対する直接の指導、監督官的役割をになっている。従って、District からの通達、指令は、Sub-division を経由して、Thana に伝達されることになっている。Sub-division はやがて廃止されるものであると云われている。

(1)　T.E.O／T.A.O

普及事業強化のため、大学卒の普及専任官として任命された Thana Extension Officer（T.E.O.）は、今なお Thana 全体に配置されるところまで至らない。

T.A.O.は各 Thana に1名以上（現員517名）任命され、T.E.O の補佐役をつとめているが、将来、T.E.O が全Thana に任命された場合には、他に配置がえされるべきものと云われている。

末端のU.A.A. に対する直接の指導、監督官であったT.A.O はGeneral Course の Intermediate College の卒業者が多く、農業の技術者ではない。

加うるに農務官として、一般行政事務を担当しているため、普及業務にたづさわる時間が制約されていた。この欠陥を補い、普及指導の強化をはかるため、農業大学卒（M.SC）をT.E.O に任命し、U.A.A の直接指導と、専門技術員的役割も兼ねさせることを期待し、あわせて、郡農業開発の責任者たらしめようとしているものであるが、T.E.O は1975年から新らたに配置されたもので、前述の如く、その数も少く、経験不足もあって、その成果はあまり期待できないもののようである。資格条件としては、大学卒、農業の実務経験5年以上の者とされているが、殆んど、大学新卒者の採用であるのと、同一任地に、2ケ年以上勤務させない規則があるらしく、地域の実態がようやくわかった頃には、任地がえが行われるのでは、指導の効果もあまり期待できないであろう。定例集会日におけるU.A.A. に対する指導、報告の取纒めは、Thana により、又

T.E.O. により異るものなのか、T.A.O がとりあつかっている姿も見受けられる。国の指導方針と、末端の実態とは必ずしも一致していない姿の見られるところに、問題があるように思われる。

(2) U.A.A.

直接、農業指導に当るU.A.A. はVillage worker の養成機関で1ケ年内外の教育を受けた者や、Jute の統制員から任務がえされた者等で、普及員としての教育、訓練の不充分な、質的に問題のある者が多かった。このような状態を改革するため、1970年からこれまでVillage Worker の養成機関であったものを、Agricultural Extension Training Institute (A.E.T.I.) と改称し、U.A.A. の養成が行われることになったが、普及事業強化のための世銀勧告にもとづき、1974年から、高校卒 Secondary School Certificate に合格した者を入所資格とし、2ケ年 間の Deploma の農業教育を行うことになった。卒業前の3ケ月間は、現地実務訓練を課するようになったのが特徴である。

従来、1 Union 1 U.A.A. で、農家戸数1,500～2,000戸、耕地面積 4,000～5,000エーカーを担当し、広すぎる地区の巡廻指導に困難があった。おまけに、指導用の自転車もなければ、住宅もない、給料も低く、Union の種子庫に起居しているものもあれば、有力農家に寄偶しての1人ぐらしを余儀なくさせられている。寄偶、寄食している農家の手伝い、Union の用務等で、普及活動に専念できないきらいが強かった。

これらの弊害をとりのぞき、末端における普及活動の促進、強化をはかるため、1976年5月から、世銀レポートにもとづく、Minimum Package Program (M.P.P.) 方式をとりあげ、濃密指導地区を選定して、指導の効率化をはかろうとしている。これと平行して、U.A.A. の住宅を設けようとの計画も進められているが、実現の可能性については、見通しがたいようである。

U.A.A. の活動はM.P.P. にもとづき、Union 内の農業集約地区を選定し、1,500～2,000 エーカーを範囲として、これを 4 block に分け、各 block に6名の Contact Farmer を置いて、週1回づつ訪問して指導に当ることになっている。

指導項目は予めD.E.O.、T.E.O. から示された2週間分の技術事項によるもので、U.A.A. 自体が農家の庭先でとらえた問題、農家からあがってくる問題を解決するために、相互に考え、切磋しあう、といった姿は殆んど見られないようである。

U.A.A. が、農家の信頼を得て、普及活動の効果を高めるためには、U.A.A. 自らが指導の重点としてとりあげようとする技術事項については、実践を通して確認し、確実な根拠と自信をもって、農家と接触することが必要である。

バングラデッシュの現状では、U.A.A. が個人的に圃場なり、設備をもって実験を試みることは望み得ないものと思われる。従って、日々、現場で展開される現象の、観察、調査を行うことによって、技術の把握につとめることが必要であろう。U.A.A. の現地活動の姿には、このような動きが認められないようである。普及活動は、紙に書かれた技術事項を Contact Farmer に取次ぐだけに終ってしまう傾向が感じられる。

技術をもって、農民をひっぱるやり方は普及者のとるべき態度ではなく、農民との話し合いの中で、農民自らが考え、姿が変り、向上してゆくようにならなければならないとしても、技術者としての U.A.A. が少くとも、稲作に関しては、かなりな自信をもって、とりくめるぐらいの研修が行われ、自らも力を養う努力を払う、ということが必要であろう。

A.E.T.I. における実務教育のあり方と、現職者に対する研修の徹底、自学研修の指導、当人の意欲づけ、等に対する配慮が、待遇改善と平行して払われる必要があるものと思う。

U.A.A. の質の向上と数の増による農村指導の徹底、充実をはかることが、この国の普及の成果をたかめる上での最大、緊急の問題であるように思われる。

(3) 普及職員の資格と任務

1. Sub-division Agriculture Officer Officer (S.D.A.O)

(1) 資格　大学卒、少なくとも5ケ年間の農業について責任ある地位の経験者

(2) 任務

1) Sub-division の普及関係職員の組織管理

2) 年間普及計画の策定

3) 計画の実施及び目標達成の監督

4) TEO/TAO 及び補佐官の監督、及び普及活動の改善

5) 今后改善される Agriculture Extension Assistant 及びTEO/TAOの訓練

6) S.M.S. の管理

2. Subject Matter Specialist（S.M.S）

A. District S.M.S. の資格

(1) 資格

1) 実際の農業に相当の実務経験をもつ大学卒

2) 植物防疫、米、小麦、Jute 又は Sugar cane の特定作物、普及、訓練、灌漑、品種改良、開発、農業経営のいづれかに特別の経験を有する者

(2) 任務

1) S.D.A.O.、T.E.O.、T.A.O. 及び Thana S.M.S に対して専門分野の特定問題の確認と解決

2) T.E.O.、T.A.O. 及び Thana の S.M.S. に対する専門的助言

3) 研究機関との専門的接触

4) 普及文書の作成

B. Thana S.M.S

(1) 資格　農業の実務経験をもつ大学卒

(2) 任務

1) A.E.A.(Agriculture Extension Assistant)、A.E.W.(Agriculture Extension Worker)及び拠点農家(Contact Farmer)の訓練

2) S.M.S のもつ特別の専門技術を必要とする農家の課題についての高度の指導、援助

3) 試験場の圃場試験及び土壌、肥料プロジェクトの研究者との接触

3. T.E.O.

(1) 資格　大学卒で少なくとも5年の農業経験を有し、その地域の主要作物についての専門的知識をもつ行政及び普及実務経験者

(2) 任務

1) Thana 全体の農業開発計画

2) 種子、肥料、灌漑施設、防除機の必要量の確定

3) 各種作物に必要な農民訓練の計画、組織化及び分担実施

4) Thana 内の全農業職員活動の調整、指導、監督

5) Thana 内の農業職員に対する給与の受領及び支払い

6) Demonstration Block の組織的創設と監督

7) 効果的な防除方法の組織的確率

4. T.A.O.

(1) 資格　農業の Deploma 所持者、5年以上の農業及び普及の経験者

(2) 任務

1) 必要に応じ T.E.O. の補助

2) 定期的に Block や Farm の巡廻監督や Village の集会に出席

3) U.A.A. の困った問題解決の援助

4) T.E.O. の種々の報告や返信の作成の援助

5) 1つの block farm の組織化の責任者

5. U.A.A.

(1) 資格　AETI の卒業者、農業の Deploma 所持者

(2) 任務

1) 担当地区の農業状況の把握

a. 管轄区域の面積

b. 耕地面積

c. 可耕地面積

d. 作物別改良品種面積

e. 牛糞以外の堆肥使用面積

f. 灌漑方法別面積

2) 管轄区域における、高、中、低別土地、耕地所在地、河川、道路、役所、施設の位置を示す見取図の作成。これは1年以内に作成のこと。

3) Block Farm を担当し、その成果を見守る。

4) 受持地域の種子、肥料、堆肥、農薬等の必要量を確認し、Union の委員会に4ケ月前に報告し、調達、配給の手配をする。

5) 奨励品種、肥料、堆肥の使用奨励と、地域農民に影響を与える有力農家の助けをかけ、試作圃、展示圃を設定し、農業のやり方についての意欲と関心を喚起する。

6) 牛糞尿の貯溜についての教育

7) 管轄地域の作物病虫害状況の観察と防除法を手配する

8) トラクター、耕転機、管井、ポンプ使用に対する農民の共同組織の確立。

9) 自主的な農協の書記を援助し、帳簿の点検を行う。

10) 農家に野菜、果樹の改良種の栽培奨励

(4) S.M.S. (Subject Matter Specialist)

試験研究と普及との橋渡しをつとめる専門技術員は、District と Thanaに置かれることになっているが、ようやく、稲作に関するS.M.S.の養成研修が、Boro 作期間を利用して4ケ月に亘って行われた。研修者はS.D.A.O.、T.E.O. の中から選抜された15名である。いづれも大学卒の者で経験年数は別として、S.M.S.の資格条件を勘案しての人選が行われたものである。Planning Committee の承認があり次第、District に配置することになっている。普及管理局では普及体制の確立を急ぐ方針で、S.M.S.の研修も始めているが、色々な関門があって、計画通りに運びかねているようなところがあるように見受けられる。

(5) 普及員の養成

普及員の養成はAETI (Agricultural Extension Training Institute)で行っている。AETIは、Village Worker の養成 Jute Regulation Staff の訓練等の機関としての役割を果して来たもので、現在、Tajhat、Gaibandha、Sherpur、Teigaon、Natore、Daulatpur、Gouripur 及び Khadimnagar (新)の8ケ所 である。

このうち、Gaibandha、Teigaon、Daulatpur 及び Sherpur は、1953～54年に International Co-operative Administration of U.S.A の援助の下にVillage Worker 養成の為の Village Agricultural Industrial Development Program (V-AID)がとりあげられ、教育機関としての施設が整えられた。その他はZamindar 等、地方豪族の邸宅であった建物を教育施設として利用して来たもので、夫々、1ケ年間の Village Worker の養成、5～6ケ月間の Agriculture Worker の訓練等が行われた。

1962年から2ケ年間の Deploma course が取り入れられ、1969年迄は、National Development Training Institute として、Directorate of Agriculture の所管の下に運営された。

Gaibandha.　（V—AIDにより設置）

Tajhat.　（Zamindar の邸宅跡）

１９７０年にはAgricultural Extension Training Institute（AETI）の呼称のもとにVillage Agricultural Workerの養成を行うようになったが、1974年から、高校卒　Secondary School Certificateを取得した者を入所資格とし、２ケ年間の農業教育を行い、Deploma のU.A.A.とすることになったものである。

この教育は、卒業前３ケ月間の現地実務教育を行うのが、これ迄の教育との違いであり、特徴づけられたものと見ることが出来よう。

世銀の勧告にもとづく、普及事業強化策の一環として、Gaibandha、Daulatpur、Sherpur、Khadmnagarは、７０%の世銀援助による現施設の拡充整備。

Faridpur（Tajhat の移転）、Ishurdi（Natoreの移転）、及びHathazariは世銀の７０%援助による新設。

Noakhaliはデンマークの援助、Dacca（Tejgaonの移転）、Barisalはバングラデッシュ政府予算、による新設、と以上１０ケ所にする計画が進められている。計画では、各AETIの収容人員を２４０名（１～２学年各１２０名）とし、１９７７／７８年にはU.A.A.を 7,５００名にしよう。更に将来は、V.E.A.(Village Extension Agent）として16,０００名、即ちIntensive areaには1,０００エーカー当り１名、Other areaには2,０００エーカー当り１名とし、前者の地域に１０,０００名、後者の地域に6,０００名を必要とするとの見通しからV.E.A.、１６,０００名を必要とする、との計画が打出されたものである。

１９７４年から発足したS.S.C.に合格した者を入所資格として２ケ年間のDeploma の農業教育を行い、U.A.A.とする教育課程を経た者、及び、１９７８年迄の計画人員は次のようになっている。（第３表）

１０ＡＥＴＩとし、各ＡＥＴＩ２４０名を収容する目標の達成までには、まだかなりの時日を要するものと思われる。増改築、新設移転の計画はおくれている。

第３表　1976～1978年のU.A.A、養成

年次 / AETI	1976	1977	1978	備　　考
Tejgaon	—	125	60	1976年の卒業生は
Gaibandha	64	36	85	1974年の入所生。
Tajhat	—	67	70	
Natore	36	30	30	
Daulatpur	59	62	70	
Sherpur	59	92	60	
Gouripur	39	—	70	
Khadimnagar	—	75	70	
計	257	487	515	

1977／78年迄に7,500人とする計画も実現の可能性はなくなった。（第4表）

さきにあげた10 AETIの他にNatore、Tejgaon、Gouripur、Tajhat の存置、Dinajpur の新設を加え、合計15AETIとする計画が新に進められている。これは1980年迄に完成の予定であると云う。（第5表）

別に又、S.S.C.に合格した者を2ケ年間教育する現在のあり方を、Intermediate Science Course を終えた者で、H.S.C.（Higher Secondary Certificate）を得た者を入所資格として、1ケ年間の農業専門教育を行い、U.A.A.とする計画も進められているようである。（第6表）

多数のU.A.A.を養成するのに、年間1 AETI 120名で、2ケ年を要するのでは能率があがらない。Intermediate Course を終えた者を採用して養成期間を1ケ年にすれば、U.A.A.の質を高めることが出来るだけでなく、倍の人員を養成することが出来、所要のU.A.A./V.E.A. を短期間に確保できるとの考え方によるものである。

第４表　AETI 別、U.A.A.　養成状況

年度別 / AETI別	1972	1973	1974	1975	1976	1977	1978
Tejgaon	151	144	—	123	—	125	60
Gaibandha	118	80	—	42	64	36	85
Tajhat	48	78	89	—	—	66	70
Natore	—	74	—	—	36	30	30
Daulatpur	100	123	35	41	59	62	70
Sherpur	106	94	12	—	59	92	60
Gouripur	38	77	—	—	39	—	70
Khadimnagar	—	—	—	—	—	75	70
計	561	670	136	206	257	486 （２年生）	515 （計画）

第５表　　Two Year Training Course

AETI Graduates

AETI	Present Training Capacity	Ultimate Training Capacity	Projected Nos. of Graduates by					備考
			1977	1978	1979	1980	1981	
Chittagong	0	240	0	0	0	120	120	Hathazari
Ishurdi	0	240	0	0	0	120	120	
Faridpur	0	240	0	0	0	120	120	
Sylhet	120	240	0	75	45	120	120	Khadimnagor
Daulatpur	122	240	60	62	60	120	120	
Gaibandha	150	240	65	35	95	120	120	
Sherpur	158	240	66	92	66	120	120	
Gouripur	72	72	40	0	72	0	70	
Natore	72	72	39	31	42	30	40	
Tajhat	120	120	0	66	60	66	60	
Dacca	190	190	0	125	60	95	95	
Rahamatpur	0	240	0	0	0	0	120	Barisal
Bagamganj	0	240	0	0	0	0	120	Noakari
Dinajpur	0	240	0	0	0	0	120	
Amount Out-put of Graduates			270	486	500	1031	1465	他にTejgaonの存置
Retirement etc.	45		193	340	308	307	307	
New Graduates entering Service			77	146	192	724	1158	
Total No.of Graduates in Service	by 1976 3,681		3,758	3,904	4,096	4,820	5,978	

第６表　　One Year Training Course

AETI Graduates

A E T I	Present Training Capacity	Ultimate Training Capacity	Project Nos. of Graduates by:					備　考
			1977	1978	1979	1980	1981	
Chittagong	0	240	0	0	240	240	240	Hathazari
Ishurdi	0	240	0	0	240	240	240	
Faridpur	0	240	0	0	240	240	240	
Sylhet	120	240	0	45	240	240	240	Khadimnagar
Daulatpur	122	240	60	60	240	240	240	
Gaibandha	150	240	65	85	240	240	240	
Sherpur	158	240	66	66	240	240	240	
Gouripur	72	72	40	72	0	0	0	
Natore	72	72	39	41	0	0	0	
Tajhat	120	120	0	54	0	0	0	
Dacca	190	190	0	65	190	240	240	
Rahmatpur	0	240	0	0	0	240	240	Barisal
Bagamganj	0	240	0	0	0	240	240	Noakari
Dinajpur	0	240	0	0	0	240	240	
Amount Output of Graduates			270	488	1870	2640	2640	他にTejgaonの存置
Retirements etc.	45		193	340	308	307	307	
New Graduates entering Service			77	148	1562	2333	2333	
Total No.of Graduates in Service	by 1976 3,681		3,758	3,906	5,468	7,801	10,134	

第５表は２年コースの場合、第６表は１年コースの場合の養成計画を示すものである。さきに述べた１５ ＡＥＴＩ は Jejgaon の存置を考えて１５になるわけであるが、この計画には加えられていない。

当初計画の進捗状況からみても、この新計画が、どのように展開されるものか、容易なことではあるまいと思う。又、収容人員の増はますます実務教育から遠ざかり、教育の効果を高めることよりも、通り一辺の形式的教育に終ってしまうおそれが大きい。教官の確保にも問題がありそうに思われる。U.A.A./V.E.A.の養成確保は緊急を要する問題ではあるが、功を急げばかえってマイナスの結果を招くことにもなりかねない。

１９７８年からは女子のU.A.A. 養成の計画も進められている。１ ＡＥＴＩ、２４名とし、さしあたり、Gaibandha、Daulatpur、Sherpur、Khadimnagarの４ AETI で行われる。１９７９年から全ＡＥＴＩでとりあげることになっている。農業課程は男子と同じであるが、特別教科として、栄養、家族計画、家庭経済が加えられるようである。入所資格は男子と同じく、高校卒Ｓ．Ｓ．Ｃ.合格者となっている。

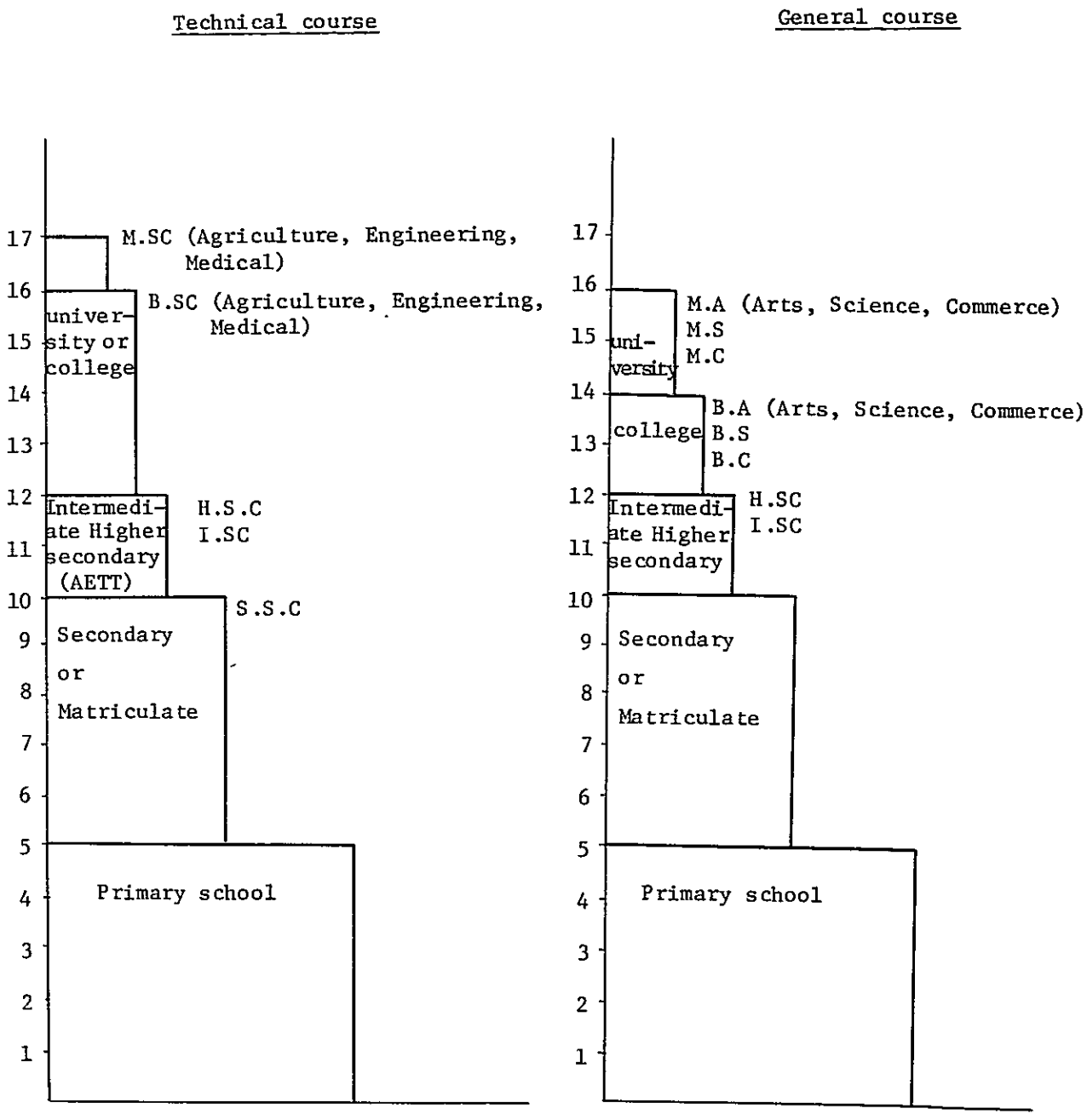
(6) バングラデッシュ国の教育制度

ここで簡単に、バングラデッシュ国の教育制度にふれておく必要がある。学校教育は５ケ年間の Primary School と次の５ケ年間の Secondary School（又はMatriculate）を終え、Secondary School Certificate（Ｓ．Ｓ．Ｃ．）を得た者が Higher Secondary（又は Intermediate ）に進む。この課程が２ケ年間、Intermediate には Art、Commerce、Science、Agriculture 等がある。ＡＥＴＩは Intermediate College と同格の Agricultural Institute である。農業の大学課程に進む者は Intermediate Science、又は Agriculture を経た者で、Technical Course 即ち、Agriculture、Engineering、Medical の Bachelor Course は、Intermediate 後４ケ年、更に Master Course １ケ年で合計１７ケ年の課程となる。

一般の Arts、chemical、Geology、Physicaly、Commerce 等の General Course は Intermediate 後 Bachelor Course ２ケ年、Master Course ２ケ年で合計１６ケ年の課程となる。（第２図）

一般の学校教育課程における農業教育は、政府としては認めていないが、学校農業教育の必要を認める地方では、Intermediate College の一部に Agriculture

第２図　バングラデシュ国の教育制度



Course を置き、選択で履修できるようになっている。又これらの地方では Secondary School の最終学年で選択課目として農業課程が履修できるようになっている。しかし、いづれも、大学卒の農業専門教師を迎えることが出来ず、内容的な充実は、のぞみ難い状態にあるもののようである。

3－3－2　普及客体の実状

(1)　農村の零細化

古い統計ではあるが1967～68年の Master Survey によると、農家の経営規模は平均3.1エーカー、2.5エーカー以下の農家57％となっている。

第7表　Number and Area of Farms by Size in Bangladesh

Master Survey of Agriculture 1967/68

Size of Farm	Farms		Farm Area	
	Number	%	Total Area	%
Below 1.5	2,588	37.68	2,016	9.35
From 1.5～to below 2.5	1,302	18.97	2,581	11.97
2.5～ 5.0	1,807	26.31	6,462	29.97
5.0～ 7.5	632	9.20	3,831	17.77
7.5～ 12.5	360	5.24	3,347	15.52
12.5～ 25.0	149	2.17	2,362	10.95
25.0～ 40.0	25	0.36	712	3.30
40.0～and above	5	0.07	251	1.17
Total	6,868	100.00	21,562	100.00

現状では1戸平均2.5エーカー、総農家数1,000万戸といわれ、全人口の 80％は農民であり、均分相続のため、年々零細化の傾向はさけられない。零細、貧困な農家が多く、加うるに土地なき農民も30％をこす有様である。零細化の傾向は、次の表からもうかがうことができる。

第8表　Percentage of Farm and Farm Areas

Size in Acres	Farms %			Areas %		
	1960	1968	1974	1960	1968	1974
less than 0.5	13	12	32	1	1	2
0.5 ～ 1.0	11	13	9	2	3	3
1.0 ～ 2.5	27	32	25	13	17	19
2.5 ～ 5.0	26	26	22	26	30	34
5.0 ～ 7.5	12	9	7	19	18	19
7.5 ～ 12.5	7	5	3	19	15	13
12.5 and above	4	3	1	20	16	11

Source.　1960 — Pakistan Census of Agriculture

1968 — Master Survey of Agriculture

1974 — BIDS Survey

第8表によれば、0.5エーカー以下の農家数は1960年の13%から1974年には32%に増加して極少農、landless farmer の増加を示している一方、7.5～12.5エーカーの中農層は1960年の7%から1974年の3%に、又、12.5エーカー 以上の大農層は1960年の4%から1974年の1%にと減少し、中規模以上層の 減少を明らかに示している。

IRDPが過去3ケ年に亘り16 District、200 Village、20,000家族以上の生産農家について聞きとり調査を行った結果によると、余剰食糧を市場販売できるのは僅か6.4%だけであった。自家消費食糧を生産できる農家は僅か16%で、10%が9ケ月分、11%は6ケ月分、19%は3ケ月分の食糧生産が可能である。凡そ35%の農家は、年間を通じて食糧を購入しなければならないと云う。

又、Comilla 地方の調査によれば、食糧自給のできる農家10%、25%は6～11ケ月分、35%は6ケ月以下、30%は年間を通じ食糧を購入しなければならないと云う。2.5エーカー以下の農家は87.5%で、そのうち、土地のない農家31.1%、1エーカー以下の農家36.3%、1エーカー以上2.49エーカー迄の農家が20.1%となっ

ている。

零細、貧困な農家の多いこと、零細化の傾向の強いことを示しているものと云えよう。

(2) 農村、農民

１９６０年の小学校に関する調査によれば、６～１０才の年令層の者が全人口の１０％、そのうち４０％が学校に籍を置いたことになっている。

１年に入学して５年迄学ぶ者の割合は１９５１～５２年の１０％から１９６７～６８年には３５％に増えたと云われている。一般的に農村では小学校５年を終えた者の割合は２０％程度と云われる。女子の就学率は低く、女生徒は全生徒の３分ノ１に過ぎない。義務教育の強化が叫ばれているが、農村では小学校入学率３０～４０％、中途退学者が多い。成人の平均学歴１～２年、文盲率８０％、特に女子は殆んど文盲とみてさしつかえないもののようである。

電灯もなく、ラジオの普及率も５０戸に１台あるなし、国道沿いで環境条件にめぐまれた農村の中農以上層では５０％程度が所持している。

自転車をもった農家も極くまれで、ラジオ、自転車、腕時計は貴重な財産といったところである。

農業協同組合はあるが、生産、販売、消費等の組合活動は行われていない。わづかにComilla の農協が、信用、共済を主体として動いているのが見られるぐらいのものである。

最近、High land、Medium land 地帯にdeep tube well が設置され、Boro 栽培が拡がりつつある。Low land 地帯では low lift pump による、Boro 栽培が盛んであるが、これらの施設を中心とした組織グループがつくられている。これらは、生産組合として育ち得る可能性をもっているものと思われる。

Joidebpur 周辺の農村には、Intermediate College を終えた青年をまじえ、多数の青年が農業に従事している。青少年の多いことは、どこの農村でも同じであるが、水稲中心の農業の中で、旧来の農法を守りながら、経営の実権は家長がにぎっているため、青少年の発言力は弱く、自主的グループ活動は殆んど行われていない。Comilla地方は５０余の青少年グループがあって、中には自主的なグループ活動が行われ、かなりの成果をあげているものもあるが、むしろ特例的なものである。多くのVillage に Social Welfare Group と称するものがあって、青少年の大部分が参加している。

中には、かなり年輩の者も加わり、読書、スポーツ、社会奉仕等がとりあげられているが、農業の生産活動はみられない。今后、積極的な育成を行わなければならない。

手工業等の婦人グループは育成されつつあるが宗教的慣習から女子の戸外活動が禁ぜられ、女子青年による農業生産活動はのぞみ得べくもないのが現状である。

農耕は犁、鍬等、旧式の手農具、畜力農具で行われる。稲作中心の古来からの農法が主体である。過剰労働力をかかえたこの国の農村では機械化による省力は農業労働者から職を奪うことになる。これは社会的な大問題である。現在の手農具、畜力農具をいかに改良し、農法の改善をはかるかが、当面の重要課題であろう。これも、現地の実態をふまえた上で慎重にとりくまなければならない。２頭曳の犁を１頭曳にかえたら、直ちに牛不足の問題が解消され、耕転の能率を高めることができそうに考えられるが、牛はみな貧弱で、やせ衰え、体型も小型になっている。牛の飼料と人間の食料が競合し、牛の改良や、体力をつけることも容易でないのが現状である。食糧の増産、あわせて飼料を増産して、牛の改良をはかる必要があろう。

高収量品種の導入、肥料、農薬の使用も奨励されている。しかし、資材購入の資金をもたない貧農では肥料も農薬も思うにまかせない。

苗代様式、種子の選択、栽培管理、収穫調製等多方面に亘り、技術改善の必要が認められる。貧農でも取り組み得るところから、逐次改良にとりくんでゆく配慮が必要なのではなかろうか。技術の伝達、農民の組織化を通じての、普及指導を考えるべきであろうが、それは、この国の農村、農民の姿をよく知り、自然的、社会、経済的条件に即して、とりくまなければならない問題であろう。貧困、零細な農民は、技術を受入れるにも、それをはばむ知識の乏しさ、因習の固さ等があって、受入れる余力もなければ、理解力もなく、気力もないところに大きな問題があろうし、中農以上の自作農でも小学校課程の教育しかうけていない者が多い。

農民の知性を高め、科学的な合理性が理解できるようにするためには、教育が根本であろう。一通りの普通教育が行きわたらなければ、普及事業の発達も容易であるまいからである。

３－３－３　M．P．P．（Minimum Package Program）

世銀レポートにもとづく普及事業の強化策が構じられつつある中で、Bangladesh政府は１９７６年４月、M．P．P．方式にもとずく、U．A．A．／V．E．A．の活動、重

点指導地域選定方針を定め、５月から重施に移した。

Ｍ．Ｐ．Ｐ．とは各Union に１ケ所、耕地面積1,５００～2,０００エーカー、農家戸数５００～６００戸の Blockを選定して重点指導を行う。地域は４つのSub-blockに分け、各Sub-block に６人の進歩的農家を選び Contact Farmer とする。

Ｕ．Ａ．Ａ．は２週間分づつの技術 Packageに基づき、Contact Farmerを拠点とした濃密指導を行うものである。

世銀が地域を限定して行う計画を示したのに対し、Bangladesh 政府は、食糧増産の一環として、全国的に、普及事業の中で実施することにした。

1. 世銀計画のＭ．Ｐ．Ｐ．

(1) Ｍ．Ｐ．Ｐ．の目的

1) Rain fed area に適する米、小麦、Jute 等のHYVの生産増強

2) 現在灌漑の行われている地域における米の生産増強

(2) Package

A.	B.
1) 面積1,５００～2,０００エーカー	1) 面積 1,５００～2,０００エーカー
2) 農家５００～６００戸	2) 農家 ７５０戸
3) 4 Sub block	3) 8 Village
4) Each Sub-block	4) Each Village
6 Contact Farmer	3 Contact Farmer

(3) 地域の選定

技術的 Rainfed HYV 穀物生産に最適の地域とは、表土は細砂、心土は粘土質で、かなり適格な降雨の期待ができる。High land か Medium land である。

Rainfed HYV 栽培に最適の地域で

5	Rainfed development area
11	Sub-division
113	Thana

以上の如く世銀は Rainfed area で HYV の栽培の盛んな地域を選んで実施するものとした。

2. M.P.P.に関するバングラデッシュ政府の通達事項

(1) Block 選定要領

U.A.A./V.E.A. の現行担当地域は耕地面積 4,000～5,000 エーカー、農家戸数 1,500～2,000 戸で、全地域に亘り職務を果すことができなかった。そこで、耕地面積 1,500～2.000 エーカー、農家戸数 500～600 戸の Block を選定して重点指導を行うことにした。地域は 4 つの Sub-block に分け、各 Sub-block に 6 人の進歩的農家を選び、Contact Farmer (C.F.) とする U.A.A/V.E.A. は Sub-block 内 6 人の Contact Farmer を毎週 1 回訪問して改良技術の伝達を行い、Sub-block 内の農業問題を討議し、指導をする。

毎週、月、火、水、木の 4 日間は Sub-block の Contact Farmer を巡廻指導する。各 Contact Farmer は、20～25 戸の農家を代表するものとする。金曜と土曜は Camp に駐在して、4 日間の活動状況の報告書作成と、Camp を訪れる Contact Farmer 及び一般農家に対する指導を行うものとする。

(2) Block 選定の方針

1) Block 内の部落がまとまったところであること。

2) 灌漑設備があり、HYV 栽培の行われる、農業熱心な地域であること。

3) B. Aman や Local Boro 等の単作地帯の場合は、大きな集団地の部落を選ぶこと。

(3) Contact Farmer の選定方針

1) 自ら直接農業を行うものであること。

2) 部落に名の知られた指導力のある農家であること

3) 土地の居住者であって、他地域からの移住者でないこと。

4) 専業農家であって、商業、サービス業、公的業務等にたづさわらない者であること。

5) 貧富のいづれにもかたよらない農家であること。

(4) M.P.P.計画にもとづく指導事項 (Package of Practice) 実施にあたって D.E.O (District Extension Officer) は 3 ケ月に亘る。2 週間分づつの技術 Package を示した。

指導事項は、現地の実態にもとづき、T.E.O が定めることになっているので、

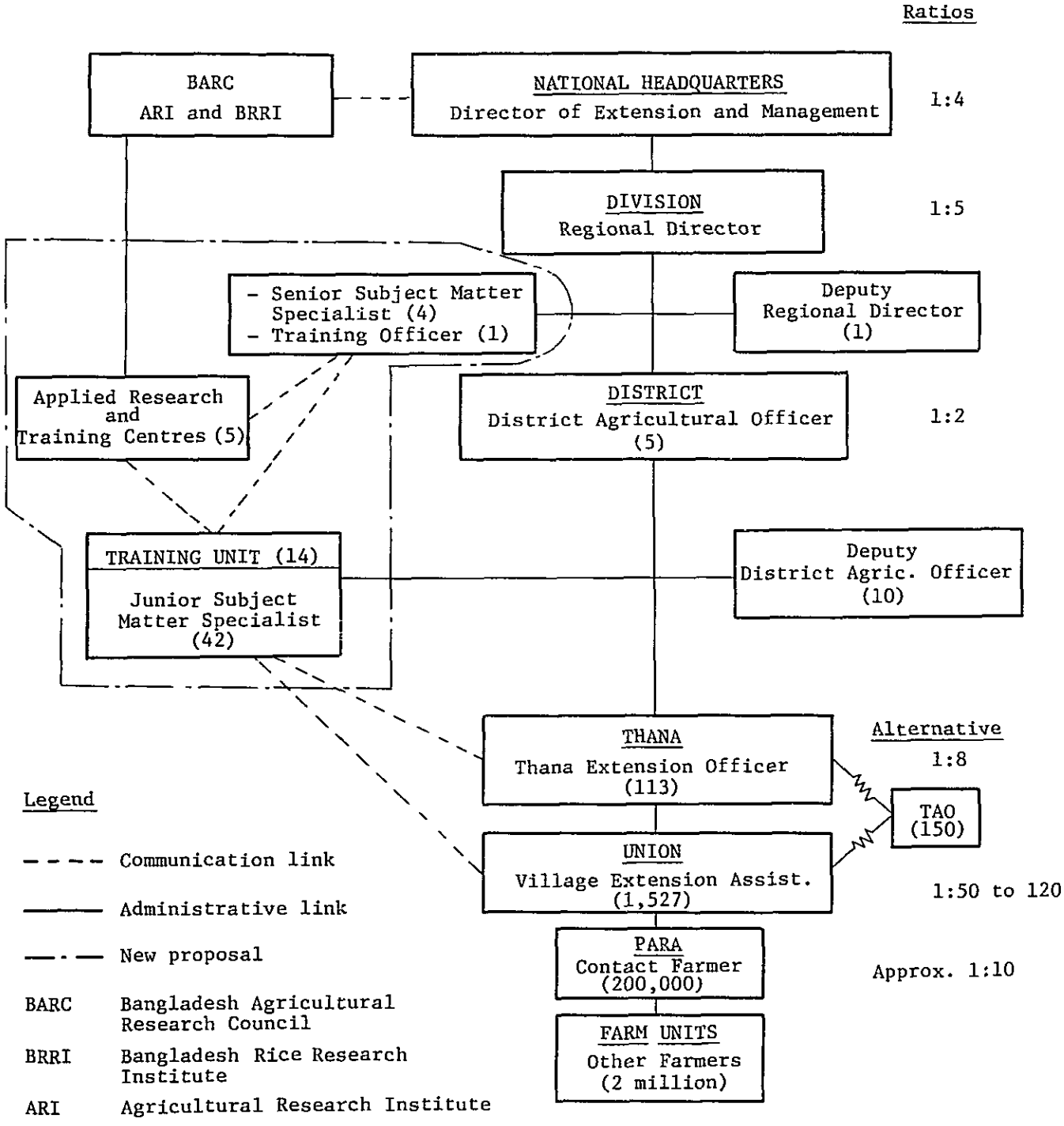
第 3 図

BANGLADESH

MINIMUM PACKAGE PROGRAMME

DIRECTORATE OF EXTENSION AND MANAGEMENT

Proposed Administrative and Communication Links



T．E．O．が２週間分の Lesson Sheet を用意してU．A．A． に示している。その時期の主要作物に関する管理上の指導事項、注意事項等が述べられているが、ペン書きしたものを、U．A．A．はめいめいこれを書きとっている。

これを持ってC．F．を訪問し、その伝達指導に当るわけである。

これを受けてC．F．はその Unit 内農家の指導を行うことになっている。

3－4　問　題　点

3－4－1　普及主体について

(1) 普及の機構組織は Union 段階まで出来ているが、事業遂行上の計画は上部でたてられ、下部に伝達されるしくみになっているし、末端における日常活動についても、指導項目は T.E.O. が作成して、U.A.A. に示すことになっている。従って、Union、Village における開発上の問題点が U.A.A. 農民の間で討議され開発計画がたてられるところまでは至らない。

(2) 地方に農業開発委員会が設置されているが、U.A.A. が重要な役割をになうことは期待できないもののようである。たとえば、郡段階の会議にT.E.O.、T.A.O. は列席しても、U.A.A. はようやく末席に加えられるか、時によると、場外にいて席もない。U.A.A. が技術指導員として重視され、尊敬されると云うことでなく、一般的には、軽視されがちなところがある。

(3) U.A.A. の質の向上、増員をはかるべく、ＡＥＴＩの増設、改修、教科内容の改訂等が計画されているが、実施が大巾におくれている。

(4) M.P.P. にもとづく、U.A.A. の拠点活動、濃密指導方式が打出されたが、U.A.A. の住宅をはじめ、事務所、活動用機材等の装備は、相変らず低位であり、活動力が減殺されている。待遇も改善されない。

U.A.A. の地位の向上、生活の安定が保証されないようでは普及事業の発展は期待できないものではないか。

(5) T.E.O. の現員１５８名。これは Thana の半数にも足りない。一部はS.D.A.O. で補うとしても、U.A.A. の直接指導、援助に当る技術者としての T.E.O. 不足は、末端における普及活動、農村開発の推進に支障を来すおそれがある。充実を急ぐべきである。

(6) 普及と試験研究を結び、U.A.A. の現地活動を強化するとともに、各機関と連絡して普及の機能を強化する役割をはたすべき S.M.S. の設置がおくれている。ようやく、１５名の稲作関係 S.M.S. が District に配置されることになったが、せめて、Sub-Division までの配置を急ぐべきである。

(7) 現地農業発展の見地から、ＢＡＤＣ、ＩＲＤＰ等による指導活動との有効適切な連携、関係属化がのぞましい。出来得れば指導体制の一元化をはかりたいところである。

(8) 環境の変化に乏しく、雨期の flood、乾期の砂漠化に特徴づけられるこの国の実態にかんがみ、水管理、灌排水との関連における農業開発の方向づけと、それにともなう普及のあり方が検討される必要がある。当面緊急を要する米の増産も、生育日数の短い新品種の育成で、米１本から、作期の繰上げによる跡作導入が可能になる機会が出て来るように思われる。

この国の農村の改革は、水処理とあわせた新しい作付体系、換金作物の導入等が検討されるようになって、はじめて実現できるのではなかろうか。

３－４－２　普及客体について

(1) 殆んどの農民は読み書きができない。文字は読めなくても絵ではわかる。言葉での説明は理解しにくくても、目で見、音で聞くのは理解できる。絵、音楽、ポスター、フィルム、展示圃等を利用した働きかけが効を奏する。そのために必要な情報と、特殊な教材提供の充実をはかるべきであろう。基本的には農民教育の強化をはからなければならない。増収になり、得になることなら、農民はついてくるはずである。それをわからせてやらなければならない。

(2) 農業の振興、農民の福利、農村の発展をはかるために農協の育成助長をはかる必要は認められている。部落に単協が、郡に中央農協があるが、生産、販売、購買等の組織活動は殆んどみられない。普及との連携も名ばかりのものにすぎない。村の指導者の育成と組合活動を現実におしすすめる努力が必要であろう。

4. 農村実態調査

将来 CERDI がとりくむ普及研究結果の現地実験を行うにあたっては、前もって、部落の実態を知り、農家の姿をしっかり把握しておくことが大切であると思う。このための農村調査、農家の実態調査を徹底して行うべきであるが、さしあたり CERDI Community Center 候補地として選んだ3部落の実態調査と、中堅農家で、将来 CERDI の協力農家として期待できるような農家について、聞きとり調査を行った。

このうち Purabari は実験村の候補部落の一つとして、はやくから、しばしば足を運び、部落民との接触も深めて来たのであるが、他の部落については、数戸の農家についての調査と、部落全体の実態把握を行っただけであった。部落調査は U.A.A.の報告に基づくものである。農家調査は、中堅農家にしぼったのと、対象農家数が少なく、地域の農家全体の姿をあらわし得ていないきらいがあるし、農家の記憶をたどりながらの口述をもとにしたもので、数字的な不確実さはまぬがれないが、将来へのなんらかの足がかりにはなし得るものと思う。

Chaydana は、除外され、他に候補地を選ぶことになったのであるが、ここでは、そのままとりあげることにした。

4－1 部落の実態

立地条件的に High land、Medium land、Low land と特徴を異にした地域で、冬期稲作用、灌漑施設の有無、池利用の養魚、農民組織の状態等を考慮し、農民の適応性、受入感覚に差異の認められるようなところで、CERDI からの距離が近く、雨期でも容易に出入りのできる舗装道路沿いの部落であること等を条件に次の3部落を選定してその実態を調べることにした。

4－1－1 Purabari

やや、High land に属する地区で、耕地区分も High land 125エーカー、Medium land 54エーカー 計179エーカーとなっている。（第9表）

Deep tube well があって、殆んど全部が Boro 作を行っている。稲作が安全有利なため、Aus、Aman、Boro の3作を行うことに熱中している。冬作野菜を導入する者も少く、小麦作も殆んど行われていない。稍々、市場に遠いきらいがあるが、Mymensing 道路沿いにあり、輸送手段、出荷、販売方法等の指導援助が加われば、将来野菜作普及の可能性もあると思われる。

5つの池を利用して、養魚組合を結成している。個人でもかなりの養魚収入をあげてい

る者もあり、稚魚の養殖、配布にとりくみはじめた者もいるので、将来への発展が期待できる。Deep tube well の利用者も同一メンバーで、組合活動は他部落に比し活発である。Boro作、養魚で、新しい意欲の育ちつつある部落で、進歩的な知識をもち、新しい感覚にめざめつつある部落民もかなり多いようであるから、組合活動の指導、グループ育成等を通じ、稲作の技術改善、養魚、養鶏、養鴨、冬野菜、等を組み合せた経営改善の可能性の高い部落といえそうである。

4－1－2　Naujori

部落の西端に Torag 河が流れ、河沿いの low land を含む地域で Deep water rice の栽培が行われていたが、power pump による冬期の灌漑が行われるようになってから Low land の全部と Medium land の一部を含め Boro 作に転換し、ＨＹＶによる Boro 一作にしぼられるようになっている。Power Pump による河水利用の Boro 作地域で、Deep tube well による Boro 作を行う Purabari と対象をなすものと云えよう。同一部落でも、High land と Medium land の一部は天水田で、Aus と Aman 栽培が行われるだけである。従って、灌漑可能地をもたない農家は、Aus と Aman による収入だけに依存しているため、生活を維持するためには、Aus と Aman の生産を高めること、そのための技術改善が必要である。

生計を豊かにするためには、農外所得の途も考えなければならない。この点国道沿いにあるため、トラックの運送業や市場での販売業等に従事する機会に恵まれているもののようである。農外所得をあげるのに比較的有利な環境条件をいかした兼業化への方向づけを考えるべき地域ではなかろうか。

当面、稲作技術改善による増収を計りながら、養魚、養鶏、養鴨の振興、High land における果樹の増植、家内工業等をとり入れた開発計画が必要であろう。この部落では Low land における雨期の水対策と High land における乾期の灌漑計画をあわせ検討の必要があるものと思う。

4－1－3　Chaydana

部落に大きな池があるが、政府所有のため、Boro作への水利用ができず、部落全体が Aus、Aman の２作しかできない Rain fed area である。

経営規模の小さな農家が多く、農外収入のある農家は特定の限られた農家だけなので、部落全体が貧困である。

緊急な小農対策を必要とする部落と云えよう。特に Deep tube well を設置して Boro 作を普及することが、部落振興の第一の要点である。乾期の水対策が構ぜられれば、余水利用による養魚も可能となり、Boro 作、冬野菜等の組みあわせで、農家所得の増、貧困の解消も期待できそうに思われる。

第 9 表　　耕　地　面　積

（エーカー）

項目＼部落別	Purabari		Naujori		Chaydana	
	面　積	比　率	面　積	比　率	面　積	比　率
High land	125.00	70%	15.00	3%	—	— %
Medium land	54.00	30	210.00	40	183.00	100
Low land	—		300.00	57	—	—
計	179.00		525.00		183.00	
1戸平均	2.98		2.76		2.06	

第 10 表　　農家戸数、農家人口、文盲率

項目＼部落別	Purabari		Naujori		Chaydana	
農家戸数	戸　数	比　率	戸　数	比　率	戸　数	比　率
自　作	35	58%	104	55%	60	67%
自小作	20	33	61	32	26	29
小　作	5	9	25	13	3	4
計	60		190		89	
農家人口	266人		506人		267人	
文盲率	85%		75%		80%	

第 11 表　　稲　　作

項目＼部落別	Purabari				Naujori				Chaydana			
作期別	Aus	Aman	Boro	計	Aus	Aman	Boro	計	Aus	Aman	Boro	計
面積 エーカー	150	190	50	390	225	325	200	750	180	183	—	363
生産量 md	2250	3420	2250	7920	3375	5850	9000	18225	3960	4392	—	8352
エーカー当 md	15	18	45	20	15	18	45	24	22	24	—	23

（md ≒ 37.5 kg）

第 12 表　　施 設 及 び 農 民 組 織

項目＼部落別	Purabari	Naujori	Chaydana
deep tube well	1	—	—
power pump	—	10	—
農業協同組合	有	有	?
養 魚 組 合	有	—	—
pump 灌漑 group	有	有	—
婦人グループ	有	有	—
青少年グループ	有	有	—
landless farmer 組合	—	—	有

4－2　農家の実態

CERDI Community Center の候補地として選んだ3部落（内 chaydana は除外された）の中堅農家で、将来 Center の協力農家として期待できるような農家について聞き取り調査を行ったもので、地域の農家全体の姿をあらわし得ないきらいはあるが、夫々地域の特徴を知ることはできるものと思う。

4－2－1　教　　育

バングラデッシュ農民の８０％は文盲といわれる。調査部落の文盲率もそれを裏書きしているようであるが、調査対象農家は、中農以上の自立農家であって、文盲の者はごく僅かであった。中には Intermediate College を終えた者もあるが、これらは特殊な部類で、農家の戸主として、農村に居住してはいるが、自ら圃場に入って、農耕に従事することは殆んどない。経営の管理者であり、就職の機会があれば、通勤範囲内で職を求める人達である。部落の指導階層としてかなりな影響力をもっている。一般的には、小学校を終えた者及びSecondary School の途中迄学んだ者が多いようである。

彼等の殆んどが読み書きのできる農家であり、部落の有力メンバーである。普及の拠点農家として、或は又、Community Center の協力農家として期待し得るものである。

部落により教育レベルの差がみられる Purabari は小さくまとまった部落で、教育の程度がかなり進んでいる。次は Naujori で、子弟教育は熱心であるが、戸主は５年程度の教育を受けた者が多く見られた。Chaydana は低く、戸主が比較的若い層で、就学児童がなお低学年であることがうかがえるが、戸主、主婦の教育レベルの低さは、部落の貧困にもつながっているものと思われる。

調査対象農家の平均教育レベルは次のとおりである。

第１３表　　対象農家の平均教育レベル

家族別／部落別	戸　主	主　婦	子　弟
Purabari	8.6 年	5.0 年	8.8 年
Naujori	4.7	2.3	8.1
Chaydana	4.1	1.3	3.7

4－2－2　耕　　地

調査対象農家が中農以上であったため、経営規模は一般的平均2.5エーカーをはるかに上廻り、耕地の平均では、Purabari 6.93エーカー、Naujori 7.6エーカー、Chaydana 3.63エーカーとなっている。最も規模の小さな農家で2エーカー、大きなものは20エーカーを経営する自作農であり、販売余力のある農家だけである。

耕地の高、中、低別分布は次のとおりである

第14表　　部落及び対象農家の耕地の高低別

土地の高低別＼部落別	Purabari		Naujori		Chaydana	
	部　落	対象農家	部　落	対象農家	部　落	対象農家
Iligh land	70%	93%	3%	22 %	－ %	7 %
Medjum land	30	7	40	49	100	89
Low land	－	－	57	29		4

部落全体からみれば、Purabari は Iligh land area、Naujori は Low land area、Chaydana は Medium land area と類別できる。環境条件を異にした3地域を選んだものである。

4－2－3　家　　畜

Naujori は各農家とも1～2頭の Cow を飼育している。Cowは乳用牛を意味し、少量ではあるが、自家用乳の生産を行っているわけで、食生活の面からみれば Naujoriが最も進歩的と見ることがでさそうである。Purabari でも大部分の農家が Cowの飼育を行い、自家用乳の生産が見られるが、Chaydana には飼育農家が見られなかった。部落全体の貧困を物語っているものと思われる。

Bull は、もっぱら牛耕、運搬に使用されるものであるが、1戸当り飼育頭数からみると、Purabari が最も多く、平均3.87頭、次は Naujori で平均2.57頭、Chaydana は最も少く平均2.27頭である。エーカー当りでは Chaydana が 0.63頭で最も多く、次は Purabari の0.56頭、Naujori は最も少く0.34頭ということになる。2頭曳で、1エーカー当りの耕耘に約3日を要するとされている。5回耕耘して整地を終るわけであ

るから、農繁期における畜力不足をどう補うかは一つの問題であろう。畜力不足を直ちに動力に置きかえることは農村の過剰労働力をしめ出すことになり、その労働力に、他の働き場所を与えることができない限り、よほど慎重に検討しなければならないところであろう。

鶏はPurabariが最も多い。中には、卵を販売して主婦の収入にあてている農家もある。一般的には、鶏卵を販売する農家はなく、殆んど自家消費用に向けられているが、産卵個数が少いため、食生活の改善に役立てうるところまでは至っていないようである。

山羊はもっぱら肉用である。これを改良して、乳肉兼用にできないものか。鴨は最も飼育の容易な家畜なのだから、もっと増殖をはかるべきだと思われるけれども、飼育数の少いのは、乾期の水欠乏が増殖をはばんでいるのではなかろうか。年間を通じて水の調整をはかることができれば、もっと鴨をふやすことができるものと思う。鴨の増殖、山羊、鶏の改良は、早急にとりくむべき、農村開発上の一つの課題であろう。部落別の1戸当平均家畜飼養頭、羽数は次のとおりである。

第15表　　部落別、対象農家平均飼養頭羽数

家畜別 / 部落別	Cow	Bull	Calf	Goat	Chicken	duck
Purabari	0.75	3.87	1.13	3.0	19.6	1.25
Naujori	1.28	2.57	1.14	2.43	1.28	2.28
Chaydana	—	2.28	0.43	0.57	6.14	—

4－2－4　農　　具

耕耘整地はもっぱらPloughとLadderによる。Ploughで耕耘、Ladderで砕土、均平を行うもので、Ploughといえば、いかにも洋式犁を思わせるが、神代の時代から受けつがれ、全く改良も加えられたこともないような、貧弱な無床犁と、梯子型　多くは竹製の地均し機である。

貧弱な牛に、丁度、適合した犁ということになりそうだが、牛の牽引力を高めることと犁の改良は、この国の農法改善の上で重要な課題ではなかろうか。

農家によっては日本の動力耕耘機をほしがるものもあるが、この国の今後の発展方向、

機械導入後の保備管理の可能性等とよくにらみあわした上で検討すべき問題であろう。現状はなお、在来の農具をいかに改良してその能率を高めるか。ということを中心に考えを進めてゆくべき段階にあるものと思う。

部落別、対象農家の農具所有状況は次のとおりである。

第16表　　平均農具所有数

農具別 / 部落別	plough	hae	sickle	ladder
Purabari	3.6	1.6	2.8	2.1
Naujori	1.9	1.6	3.3	1.3
Chaydana	1.1	1.1	1.3	1.9

4－2－5　植　　物

農家は宅地の周りに色々な果樹を栽植している。中には計画的に、販売を考えた果実の生産を行っているものもあるが、一般的には自家消費用である。

最も多く見られるのは砂糖椰子で、これに2種類ある。一つは Date palm（ナツメ椰子）で、幹の上端に深い切り込みをつけ、ゴムの採汁要領で液汁を集め、これを煮つめて水飴状の砂糖汁を作り、朝食事 popped rice にかけて、食用にしている。固めたものは gur と称する。いわゆる黒砂糖として販売もする。他は palmyra palm（扇椰子）で主として雄木の花梗を切断して液汁を採取し、よく飲用に供する。これを2～3日放置すると醗酵してかなり強度のアルコール飲料になるようである。雌木には房状に円形の果実を生じ、ジェリー状の内容物を食用に供する。ココ椰子は比較的少い。

他にマンゴー、バナナ等も多い。これらは質の改善、生産の増をはかるとともに生活改善との関連で、生産、加工、消費等の技術指導を要するものと思われる。

麻もかなり多い。これが活用も考える必要があろう。

対象農家の平均果樹栽植本数は次のとおりである。

第17表　　対象農家の平均果樹栽植本数

種類別 / 部落別	Palm	Mango	Banana	Jackfruit	Papaya
Purabari	5.7	1.9	10.1	1.0	0.3
Naujori	7.1	17.6	11.4	2.6	0.4
Chaydana	17.1	5.1	3.3	0.6	0.3

4－2－6　その他の所有物

国道沿いの一部に電灯のはいった農家もあるが、農村は殆んど無点灯である。耐久消費材といったものは見られない。トランジスターラジオ、自転車、腕時計等を所持しておればいい方、中農以上層でも各農家が所持するところまではいかない。いずれも貴重品の部類に属するわけである。

その実態は次のとおりで、Chaydana の農家で、これらを所持するものはみられなかった。

第18表　　対象農家のラジオ、自転車等の所有率

種別 / 部落別	ラジオ	自転車	腕時計
Purabari	62 %	37 %	87 %
Naujori	57	14	71
Chaydana	—	—	—

4－2－7　稲の生産

1戸当り、対象農家の平均耕地面積はNaujori が7.6エーカーで最も大きく、次はPurabari の6.93エーカー、Chaydana が最も小さく、3.63エーカーであるが、稲の生産はPurabari が最も多く、次はNaujori で、Chaydana は少い。Purabari は deep tube well により、全農家が、Aus、Aman、Boro の3作を行い安定した生産をあげている。殊に Boro の生産が高い。

灌漑施設により冬作稲（Boro）の栽培を行えることが、Rainfed area における稲の生産増、ひいては、農家所得の増に、いかに大きく作用するものであるかをうかがい知ることができるというものであろう。

Naujori は河沿いの low land 及び一部 Medium land に low lift pump による灌漑を行い、Boro 栽培を行っているが、low land は Boro 栽培を行うだけで、雨期作の Aman（ここでは deep water rice）栽培は殆んど行われていない。Boroで安定多収をはかり、不安定な deep water rice はとりあげないわけである。従って、稲の作付率は Purabari の 177%に対し Naujori は 129%と低い。Chaydana は 186%と作付率は高いのであるが、Aus、Aman の 2 作に全力を注いでいるにも拘らず生産高は低い。ここでは deep tube well による冬作灌漑が行えるようにならない限り、生産の向上、経営の安定はのぞみ難いと云い得るであろう。

Deep tube well、low lift pump 等による乾期冬作の灌漑を可能ならしめることが、この国の広範に亘る rainfed area 及び low land area における農業開発上の極めて重要な問題である。

部落別、対象農家の 1 戸当平均稲作面積及び生産高は次のとおりである。

第 19 表　　部落別1戸平均稲作面積と生産高　（エーカー、md）

部落別 / 項目別 / 作期別	Purabari			Naujori			Chaydana		
	面積	生産高	エーカー当り	面積	生産高	エーカー当り	面積	生産高	エーカー当り
Aus	295	65.30	22.1	286	52.10	182	326	82.85	25.5
Aman	6.00	169.70	28.3	326	8140	25.0	334	92.40	27.5
Boro	333	175.30	52.6	366	16428	449	016	329	20.5
計	1227	410.30	33.4	9.77	29786	3049	6.76	17786	26.3

（md ≒ 37.5 kg）

4－2－8　生　産　費

種子代の支出を見ない農家が多い、種子は自家採種のもので採種上の知識に乏しいため、異品種混入し、一般的に雑穂が多いのであるが、気にしていないようである。苗代は平床で、病虫害防除、施肥等の管理は殆んど行われていない。Purabari 以外は農薬使用が極

めて少い、適時に所要の農薬が入手できないようなこともあろうし、防除機が間にあわないといった事も起り勝で徹底した防除が行われない。病虫害防除への関心も、高くないもののようである。

肥料はエーカー当り施用基準量から算出したものが大部分で、農家に作期毎の施用量、年間の施用量を数量的に答え得るものは殆んどいない。

労賃は、常傭い、臨時傭い等の労賃であるが、記憶をたどりながらの口述によるもので、正確を期し難い。

将来の問題として、記帳農家を指定し、正確な生産費計算を行う必要があろう。

種子の選択、更新、育苗、病虫害防除、施肥等の面が特に技術指導の盲点になっているもののように見受けられる。部落別、生産費の内訳は次のとおりである。

第20表　　部落別平均生産費　　(T.K.)

項目別 / 部落別	種　子	肥　料	農　薬	労　賃	Pump 負担金	計
Purabari	488.46	1545.73	345.62	5217.35	968.75	8562.21
Naujori	—	1104.02	32.86	2810.00	1077.14	5013.73
Chaydana	7.14	851.54	70.14	1221.43	4.28	2154.54

4－2－9　農業所得

所得の大半は稲作収入によるものである。Jute、Mustard は栽培面積少く自家用に振り向けられるものが多い。中には、養鶏、養魚、竹や木材の販売で収入をあげているものもあるが、ごく一部の限られたものにすぎず、金額も僅かである。稲作主体の農業で、これからも、稲作を中心に、地域の条件に応じて適当な他の作目を取り入れた形で展開されていくものと考えて間違いあるまい。稲作の技術改善、稲増収のためのあらゆる施策を講じなければならない。あわせて、稲を中心とした複合的な栽培体系の確立、換金作物の導入、中小家畜の改良、増殖、養魚等により収入増をはかるべきであろう。農外所得は、小学校教師、小売業、トラック運転等によるものでPurabari、Naujori にその例がみられる。

稲作主体の所得であるから、稲の生産の高い順に、所得にも格差を生ずることは明らかである。

部落別、対象農家の農家所得は次のとおりである。

第21表　　部落別、平均農家所得　　(T.K.)

項目別 / 部落別	農業所得	農外所得	農家所得
Purabari	16,603	1,320	17,923
Naujori	9,923	2,228	12,151
Chaydana	5,939	51	5,990

4－2－10　生活費

生活費の中に占める食糧費の割合が極めて大きい。Purabari では上級学校に進学させるために高額の学費支出を行っている農家もあれば、小学校入学をさけ、学費支出は教科書の購入だけで、僅少な農家もある。

Naujori は上級学校に学ばせている農家が多く、全農家が子弟教育に意を用いている様子が見受けられる Chaydana は全般的に就学年令が低いこともあって、教育費の支出は少い。

生活費は所得に比例して、地域別の格差が見られ、生活程度の差を示している。部落別農家平均の生活費は次のとおりである。

第22表　　部落別、平均生活費　(T.K.)

項目別 / 部落別	衣	食	光熱	住	教育	衛生	租税	その他	計
Purabari	171550	594625	292.05	187.50	126250	587.50	115.37	1605.00	11,711.87
Naujori	1657.14	2820.00	421.43	312.86	1071.71	601.43	147.43	367.86	7,399.86
Chaydana	828.57	226000	244.28	122.85	52.14	132.86	56.71	10.71	3,722.43

ここに示す食糧費は市場からの購入食品費で、自家消費米は計上しなかった。次に自家

消費米も計上して、生活費に占める割合を見ると、次に示すとおりである。

第23表　　食費の生活費に占める割合

項目別 / 部落別	市場購入食品	自家消費米	食糧費 A	生活費 B	A／B %
Purabari	5946.25	7695.0	13,461.25	19,406.25	70.29
Naujori	2820.00	8914.2	11,734.20	16,309.00	71.95
Chaydana	2260.00	4821.6	7,081.60	8,543.86	82.88

エンゲル係数の高さは、生活程度の低さにつながるもので、部落別の生活程度の差を伺い知ることができるように思われる。

なお、バングラデッシュのエンゲル係数は70％といわれるところからみて、かなり豊かな農村地帯では、ほぼそれに近い状態にあるのではなかろうか。貧しい農村、貧農ではChaydana同様の傾向がみられるものと思われる。バングラ農村の開発、生産性の向上、生活の改善は、農業だけで解決できる問題ではなく、尚、前途多難なものがあるのではなかろうか。

4－3　結　び

(1) 部落の文盲率80％、調査農家でも大半は小学校卒業程度。普及事業の効果を期待するには、文盲の解消、全般的教育レベルのひきあげ、成人教育の強化が必要である。

(2) 部落の単協、婦人グループ、青少年クラブ等、存在してはいるが生産活動は見られない。組合活動、青少年活動、婦人グループ活動等、いづれも生産、生活と結びつけた活動を促進し、農業生産の向上、農家生活の合理化をめざす方向への指導が必要である。

(3) 役牛、乳用牛の改良、農機具の改良、農法の改善はこの国の農業改良上、ゆるがせに出来ない問題と思われる。

(4) 中小家畜、家　の改良、増殖、淡水魚の奨励、冬野菜の栽培、家内工業の振興等による農家所得の増と、栄養改善をはかるべきである。

(5) 地域によっては自転車運転、整備技術の訓練を通じて農外就業の道を構ずることも必要

であろう。

(6) 宅地周辺に植えられた果樹は、自家消費用が主体で放任栽培である。果樹としての管理、質の改良、増産、加工への技術指導が必要であろう。

(7) Deep tube well によるBoro 栽培が行われるようになって、食糧自給ができるようになった地域がふえつつある。乾期、冬作を可能ならしめるための灌漑施設を整えることは、この国の食糧増産からみても、農家経済の安定、生活の向上を計る上からも極めて重要な問題である。

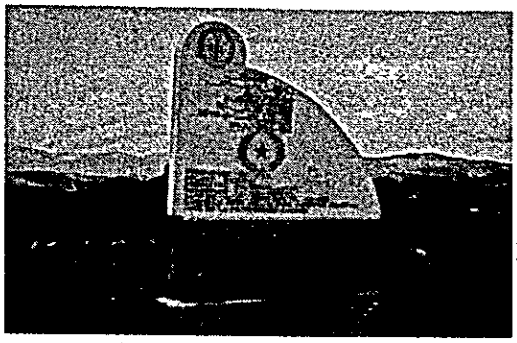
(8) 稲作の技術改善を要する面が多い。優良種子を配布し、展示圃で見せ、助言を加えてやらせるようにすれば、この国の農民も結構受入れてゆくようである。バングラデッシュに適応した指導法が必要である。

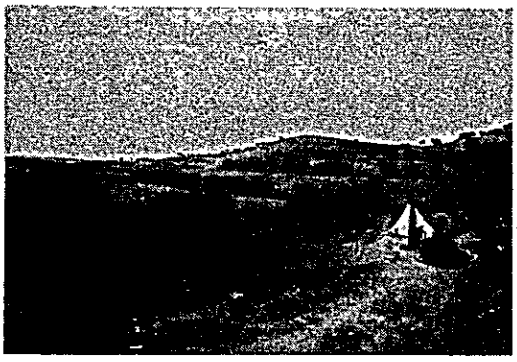
(9) 農村には電灯がない、農民教育、農村文化の向上をはかるためにも、農村電化はゆるがせにできない問題であろう。

(10) 農村は飲料水に乏しい。ＵＮＩＣＥＦが手押しポンプを設置しているが、農家の数が多すぎる。もっと援助の手をさしのべる必要がありそうに思われる。

(11) ３エーカー程度、平均をちょっと上廻る程度の農家でも、屋内の土間に、ゴザを敷いて寝る。雨期は、健康上にはよくあるまいと思われる。カマドとあわせて生活改善でとりあげる必要があろう。

(12) ５０％の作り分け小作、均分相続による耕地の零細化、いずれも農民の生産意欲を阻害し、増産をはばむ原因になる。なんとかならないものかと思う。





— 付　録 —

SURVEY ON THE ACTUAL CIRCUMSTANCES OF A FEW RURAL VILLAGES AND THEIR FARMERS PRIOR TO THE STARTS OF CUMMUNITY CENTERS OF CERDI

BY

Mr. Tosaburo FUKUZATO

Japanese Expert in Charge of Extension for CERDI

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THE CENTRAL EXTENSION RESOURCES DEVELOPMENT INSTITUTE

DACCA, BANGLADESH.

INTRODUCTION:

Technical extension resources developed in the CERDI should be extend spreading into rural fields through the following process:

(a) To confirm the adaptability of said technique in each locality through local experiment.

(b) To confirm the acceptability of the said synthesized technique under the socio-economic circumstances in the area involving the level of farmers skills where it could be accepted smoothly by the farmers.

(c) The said technique should be modified at any rate through a. and b. if certain inadequate part is found out.

Accordingly there has been an idea to set up several experimental villages or unions selecting the locality and conditions to fulfill the above confirmations. Stemid from this idea, the CERDI Community Centers has been approved to be set up at the selected localities. In this connection, a survey work was necessary to learn the actual circumstances of rural conditions generally in wide areas for the selection of these experimental villages where the Community Centers are set up.

This paper is within to report the outline of survey carried out on the above purpose.

1. SURVEY ON THE ACTUAL CIRCUMSTANCES OF VILLAGES:

Survey for the selection of villages where CERDI Community Centers are to be set up was done taking consideration on the following factors and two villages out of three were eventually selected as the proposed sites.

(a) As to the topographic condition, it is desired to be difference of upland medium and lowland.

(b) Be difference in having sufficient and no irrigation facilities for dry season rice cropping.

(c) Be difference in the grades of farmer's organization system.

(d) Be difference in the feeling of farmers and their adaptability for introduction of new agricultural techniques.

(e) Be common in a good traffic condition from CERDI, Joydevpur desired to be along a paved highway and easily approach even during mid-wet season.

Three sites were selected and made a survey of actual circumstances as follows: (see table-1. to table 4.).

Table-1. Cultivable Land:

Item \ Village	Purabari		Naujori		Chaydana	
	area	acre %	area	acre %	area	acre %
Up-land	125.00	70	15.00	3	--	-
Medium land	54.00	30	210.00	40	183.00	100
Low-land			300.00	57	--	100
Total	179.00	100	525.00	100	183.00	100

Table-2. Number of Farm Classified by Tenure System:

Item \ Village	Purabari		Naujori		Chaydana	
	Number	%	Number	%	Number	%
Owner	35	58	104	55	60	67
Owner-Cum-Tenant	20	33	61	32	26	29
Tenant	5	9	25	13	3	4
Total	60	100	190	100	89	100

Table-3. Area Production and Per Acre Yield of Paddy:

Village / Item	Purabari				Naujori				Chaydana			
	Aus	Aman	Bore	Total	Aus	Aman	Bore	Total	Aus	Aman	Bore	Total
Area Acre	150	190	50	390	225	325	200	750	180	183	--	363
Production (md)	2250	3420	2250	7920	3375	5850	9000	18225	3960	4392	--	8352
Per acre (md)	15	18	45	20	15	18	45	24	22	24		23

(Note: 1 md. = 37 kg)

Table-4. Equipment and Project:

Village / Item	Purabari	Naujori	Chaydana
Deep tubewell	1	--	--
Power pump	--	10	--
Fish culture	much	some	nil
Association and group	good	medium	few

2. Characteristics of the Village:

2.1 Purabari

(a) This village belong generally upland topography and the cultivated area is classified into 125 acres of upland, 54 acres of medium totalling 179 acre.

(b) Being available a deep tubewell, almost all the farmers in the village growing Boro crop rice. Since rice production

is the stable and benefitable cropping, rice is grown here all the three seasons of Aus, Amon and Boro. Therefore, vegetable and wheat cultivation are less or scarce at present. In the future, however, this place has an enough potentiality of vegetable cultivation being along Mymenshngh highway, providing a systematic technical guidance and supervision on not only cultivation technique but also those of transportation, shipping and marketing although this is somewhat distant from big city market.

(c) Fish breeding cooperative was already set up utilizing available ponds. Boro rice combined with fish breeding is present target of promotion in this village. There are pretty many villagers being awakened and positively introducing new knowledge and agricultural knowhow.

(d) Accordingly, it may be recommendable to build up a model village of farm management improvement with combined farming of improved rice cultivation, fish breeding, chicken and ducks breeding, and vegetable cultivation as well, through a promotion of organizing cooperative activities and of bringing up of youth group activities.

2.2 Naujori

(a) This village is situated along River Torag in the west. Utilizing all the low land fields along the river and partially medium land fields, a Boro cropping of high yield variety under irrigation using power pumps and the farmers are gainning good yields. This Boro rice cropping here using river water with power pump is quite comparable with that at Purabari utilizing under ground water with deep tubewell pump.

(b) At all the upland fields and part of medium land fields in this village, rice cultivation is managed only in Aus and Aman seasons because no irrigation facilities is available. Villagers holding these fields have a necessity to earn non-agricultural income to level up their living.

(c) Favoured with being along the national highway, the villagers can enjoy to join with such jobs as transportation, selling goods in the road side market and other service business, therefore, this place can be said an area characterized by increasing the income with side works.

(d) It can be recommandable in this area for the farm management improvement that introduciong improved rice cultivation techniques, the farming should be combined with development of cottage industry, poultry farming, fish breeding.

(e) The villagers have rather high concern on education of their children. It seems to be in near future to face at discussion to improve agricultural affairs involving social problems.

2.3 Choydana

(a) Lacking with irrigation facilities, the rice cultivation here is limitted in two croppings of Aus and Amon. Most of the farmers are peasants and it seems to be poor in whole village. This village can be said one of the model which is necessary to introduce urgently a countermeasure to bring up small farming.

(b) In order to encourage agriculture of this area, the first urgent thing is to make possible in growing Boro rice by installing irrigation facilities with deep tubewell.

(c) Since this village is situated along the national highway and not so far from the industrial area of Tongi, the villagers are seemed to sand a chance of being employed. According to this survey result, however, it was realized that almost no farmer was earning any non-agricultural income as far as the objective farmers were concerned.

(d) As a countermeasure of dry season farming, it would be the best way to install a deep tube well which will provide increasing of farmers income by means of introducing Boro rice cropping with improved high yield variety together with

adequate, vegetable culture so that the villager could overcome their poverty. Besides, when a deep tube well is installed, some fish breeding may also come to be practicable utilizing the surplus water from farm irrigation.

3. Survey on the Farmer's Realities:

The objective farmers in this survey were groups of leading farmers in three villages selected for the proposed sites of the CERDI Community Center. They could be expected to be those cooperate with the Community Centers, and seemed to be volitional. Survey was done by learning to the objective farmers.

The areas were selected as mentioned in 1, having a difference on the grades of upland, medium and lowland field.

The result of survey can be said showing just outline of the farming conditions with socio-economic line although there might be some fructuation on the real circumstances of whole farmers there because the objective farmers have been limited to small number and belonged to higher class.

The author wishes this report to be the original record just before the start of extension activities of CERDI for the sites through the activity of the Community Centers which can be a grand data for the measurement of achieved improvement in the sites after the extension activities are moved, that is to be the essential basic farmers individual records to be utilized for the extension activities from now.

The survey items were as follows:

1. Family
   Age of the head of family
   Education level
   Family Number
   Educational level of family
2. Cultivated land
3. Cattles
4. Agricultural tools
5. Planted areas of paddy
6. Production of paddy
   Home consumption (self supply)
   Amount of sales.
7. Agricultural income
8. Non-Agricultural income
9. Production cost of paddy
10. Living cost
11. Agricultural profits and expenses.

In this report, however, the author discribed just on the main items.

3.1 Education

The level of education of the villagers is not more than 1 or 2 year grade of education. General average percentage of illiteracy throughout the three villages is 77.7% for male and 82% for female averaging 80%. As to the objective farmers, there was almost no illiteracy as they belonged to high class being self reliant in their own farming. In general most of them were those finished elementary school or quitters of secondary school. They can read and write letters and can be volunteers of the Community Center as contact farmers with extension activities. However, some extent of difference was seen among three villages.

As to Purabari which village is united compactly it has rather advanced educationally having many intermediate finishers and being eager in their children education.

At Naujori, most of home masters have education grade of five years in elementary but are also eager in their children education.

Education level of Chaydana village is low and this low level of education in house masters and wives seems to tell also the grade of its proverty although they are rather young having young children.

The average education levels of the objective farmers are shown in Table 5.

Table No.5 The average education levels of objective farmers.

Item / Village	Head of family	Wives	Children
Purabari	8.6	5.0	8.8
Naujori	4.7	2.3	8.1
Chaydana	4.1	1.3	3.7

3.2 Cultivated Lands

In general, it can be classified that Purabari belongs to upland area, Naujori to lowland area and Chaydana to medium land, this is because of selecting the sites in different topographical condition.

Table No.6 shows the distribution of farming fields in classification from which the general classification of the site mentioned the above can be under stood.

Table No.6 The distribution of Area under classified land

	Purabari		Naujori		Chaydana	
	Village	Objective farmer	Village	Objective farmer	Village	Objective farmer
Up-land	70%	93%	3%	22%	-%	7%
Medium land	30	7	40	49	100	89
Low land			57	29	-	4
Total	100	100	100	100	100	100

The average farming area per household are 6.93 acres at Purabari, 7.6 acres at Naujori and 3.63 acres at Chaydana.

The smallest farmers manage 2 acres and the largest ones 20 acres. It shows clearly the farmers belong to larger than middle class and are landed farmers having surplus products for sale.

3.3 Cattles

Average numbers of head of cattles[1] and poultry at each village are as follows:

Note: 1 All the figures shown hereafter are those based on the objective farmers.

Table No.7 Average numbers of cattles of per farmhouse in each villages

Item / Village	Cow	Bull	Calf	Goat	Chicken	Duck
Purabari	0.75	3.87	1.13	3.00	19.60	1.25
Naujori	1.28	2.57	1.14	2.43	1.28	2.28
Chaydana	-	2.28	0.43	0.57	6.14	-

At Naujori, all the farmers are keeping cows, while at Purabari 60% of the farmers keep 1 or 2 heads of cows. These milk cows are breeded for self-supply and it seems to be good for health maintenance of the families supplying daily nutritions. The fact, no cow breeding at Chaydana, shows also the poverty of this village.

As to the average head number of bull per household, Purabari is the most, averaging 3.87 head, the next is Naujori, 2.97, and Chaydana is the least, 2.28, that is draft cattle. The efficiency of draft cattle is that land preparation of one acre needs 3 days by two bull carriage. This data shows rather shortening of draft cattles and it may cause rough management in land preparation.

Chicken keeping is the most in Purabari among the three. Generally almost all the farmers keeping chicken sell neither hens nor eggs consuming for themselves. This may be due to keeping so few number that could not get surplus for selling, may be not enough even to satisfy for health improvement. However, the surveyer can find a few farmers in Purabari who are selling their surplus eggs for out side and this business belongs to the housewives. It seems to be dawn of economic chicken breeding and this village has an enough potentiality to develop chicken breeding to improve farmer's income.

Goats being breed here are only meat use variety. It seems to the surveyer that if a milk variety were introduced, they would get high nutritives milk for their family at least feed stuff comparing with milk cow.

Variety improvement of goat and chicken and increase of duck breeding could be the urgent programme in the subjects of village development.

3.4 Agricultural Equipments:

Land preparation of field is managed by cattle plough (langol) and ladder (moi) but there would be a problem in the accurateness of both tools themselves and practice thereby. Considering from present situation of Bangladesh, the improvement of cattle tools should be the first urgent thing for the real production increase of rice, that is how to improve modifying the present agricultural tools to raise up their efficiency and accurateness of work. For example, the point of improvement of present plough should be:

(a) To be drawn by present bull.

(b) To improve the shape especially curve of blade with good steel in order to be able to plow out at least 15 cm of depth. However, in detail, what kind of blade shape is practical is the subject of research work hereafter. This improvement would be much easier and practical to materialize under present situation of village as viewed from economical and practical ability of the farmers than a straight mechanization.

Table No.8 Average Agricultural Tools per Farmhouse

Item / Village	Plough	Hoe	Sickle	Ladder
Purabari	3.6	1.6	2.8	2.1
Naujori	1.9	1.6	3.3	1.3
Chaydana	1.1	1.1	1.3	1.9

3.5 Paddy Production

Average cultivated land per household are 7.6 acres in Naujori, the biggest, 6.93 acres in Purabari, the next, and 3.6 acres in Chayadana, the smallest. The amount of paddy production is the highest with Purabari, the next with Naujori and the least with Chaydana.

It seems to be due to the situation of Purabari, that is, installing a deep tube well, all the farmers can manage Boro cropping together with Aus and Amon making stable paddy production with three season croppings. It is notable that Boro cropping is giving them the highest yield. This fact shows how big the effect of installation of deep tube well in the rain-fed area, on the improvement of paddy productivity of the land resulting in increase of farmer's income stably.

In Naujori, Boro cropping is managed at low land field along the river under pumping-up irrigation and the farmers are executing mainly Boro cropping and almost no deep water rice cultivation. It is due to making stable production with Boro cropping and do not introducing instable deep water rice cultivation. Therefore the cropping rate of paddy is 129% with Naujori being much less than 186% with Chaydana.

In Chaydana, although its cropping rate of paddy shows the highest with 186% the production rate shows the lowest of 26.3 md. 1 acre, which is due to their croppings are centering on Aus and Aman seasons. It can be said that this village may not achieve their increase of productivity and stabilization of farming unless providing dry season irrigation by means of installing deep tube well.

The acrage and production per farmer's household in the three village are shown in Table 9.

Table 9. The Acreage and Production paddy per Farm House

	Purabari			Naujori			Chaydana		
	Area	Production	Per acre	Area	Production	Per acre	Area	Production	Per acre
	acre	md.	md.	acre	md.	md.	acre	md.	md.
Aus	295	65.30	21.1	2.86	52.10	18.2	3.26	82.85	25.5
Aman	600	169.70	28.3	3.26	81.40	25.0	3.34	92.40	27.5
Boro	333	175.30	52.6	3.66	164.28	44.9	0.16	3.29	20.5
Total	12.29	410.30	33.4	9.77	297.86	30.49	6.76	177.86	26.3

(Note: 1 md. = 37 kg)

3.6 Production Cost of Rice:

As to the seed cost, most of farmers do not account the seed expense because of self-supply. Since seeds are produced themselves, generally much foreign type ears are apparently seen in the fields, that means the purity is terrible low mixing foreign varieties due to low knowledge of seed production among the farmers.

The nursery bed is a kind of flat bed and plant protection management and fertilizer application are scarcely done in the nursery bed.

Except in Purabari, the use of agricultural chemicals is generally scarce and seems to be lacking of plant protection idea.

Fertilizer application rate shown in Table 10 is estimated from recommended standard per acre but very few farmers can answer their dosage of fertilizer per every season and total dosage per year.

As to the labour cost, it is accounted only on employed labours but really it is not come from records, therefore may fluctuate more or less.

In conclussion, it seems to the author that usage of superior seeds, raising seedling method, shallow transplanting fertilizer application and plant protection methods are an urgent things to be improved by extension agents.

The contents of production cost per farmers household is shown in Table 10.

Table 10. Production Cost of per Farm House (T.K.)

	Seed	Fertilizer	Pesticide	Labour cost	Pump fee	Total
Purabari	488.46	1545.73	345.62	5217.35	968.75	8562.21
Naujori	-	1104.02	32.86	2810.00	1077.14	5013.73
Chaydana	7.14	851.54	70.14	1221.43	4.28	2154.54

3.7 Farmer's Income:

Most of the farmer's incomes are depended on paddy croppings. The cultivation of jute and mastard oil in these three areas are much less acrage and most of their products are consumed by themselves.

There are some farmers who are getting earnings from poultry, pisciculture, and timbers but it is rare case.

Other non-farming earning examples are teacher of elementary school, retailer and driver of track and these are found in Purabari and Naujori.

Since paddy is the main earning of these areas, the difference of earnings among the farmers is clearly seen on the orders of paddy production.

The precised farmer's incomes are shown in Table 11.

Table 11 Average Farmer's Income of per Farm House. (T.K)

Income / Village	Agricultural Income	Non-Agriculture Income	Farmers Income
Purabari	16,603	1,320	17,923
Naujori	9,923	2,228	12,151
Chaydana	5,939	51	5,990

3.8 Living Cost

Living cost shows the living level of the farmers among the villages due to it depends on the earnings.

The average living costs in the three villages are shown in Table 12.

Table 12 Average Living Cost: (T.K)

Items / Village	Cloths	Food	Light	House	Education	Sanitary	Tax	Others	Total
Purabari	1715.50	5946.25	292.25	187.50	1262.50	587.50	115.37	1605.00	11,711.87
Naujori	1657.14	2820.00	421.43	312.86	1071.71	601.43	147.43	367.86	7,399.85
Chaydana	828.57	2260.00	244.28	122.85	52.14	132.86	56.71	10.71	3,722.43

The food cost shown here means only those buying from the market and excluding self-supplying rice. The figures in the next Table is adding the food of self-supplied and this Table also shows Engels coefficient estimated here.

Table 13 Engels Coefficient

Items / Village	Food from market	Food self-supply	Total cost of food	Total living cost	Engel's coefficient
	TK.	TK.	TK.	TK	
Purabari	5946.25	7695.0	13,641.25	19,406.25	70.29%
Naujori	2820.00	8914.2	11,734.23	16.309.00	71.95
Chaydana	2260.00	4821.6	7,081.60	8,543.86	82.88

The bigger Engel coefficient means lower grade of livings just opposite order of earnings shown in Table 13.

It shows the problem that Engels coefficients of all the village show more than 70% which shows how poor the farmers in Bangladesh.

To improve this coefficient aiming at less than 50% would be the first stamp but it still involves big problems how to improve the farmers incomes and livings which may needs a great effort.

4. Conclusion:

1. Generally it is urgent to level up the education especially urgent in the education of farmers.

2. The physique of cattles is very poor though the number of labour cattles are fairly maintained by the farmers. Improvements of milk cows, and other small cattles are required by means of improving and maintenance of good pastures.

3. Improvement of farming techniques by means of improving agricultural tools for cattle and manuals is necessary.

4. It would be urgent thing to recommend farmers installing facilities for sweet water pisciculture for the purpose of improvement of farmers health supplying animal protein.

5. It is urgent to install electricity to the rural areas.

6. As to the improvement of paddy culture, the followings should be demanded to improve and technical extension.

   (a) Production and distribution of superior seeds, not only on the variety but also their quality especially on the purity.

   (b) To guide farmers on the improved style of nursery bed and its management.

   (c) To make complete practice on deep ploughing, shallow transplanting and regular transplanting.

   (d) Recommandation and guidance on fertilizer application and plant protection.

   (e) Rationalization of irrigation water supply and drainage.

7. To recommend promoting Boro paddy and rabi crops by means of installing irrigation facilities in dry season.

8. The training on developing side work earnings or getting employ out of farming for the improvement of living level.

9. Promotion of cooperative activities, and bringing up of youth clubs and women's group are necessary.

10. In the future problem, making up of farmer's household cards, guidance on bookkeeping of farming will be demanded.

—— 参 考 資 料 ——

SOCIO-ECONOMIC ASPECTS

From "Agriculture in East Pakistan"
by KALIMUDDIN AHMED, 1965.

POPULATION

Agriculture is the oldest and biggest occupation of the people of East Pakistan. Indo-Pakistan's Neolithic technology including agriculture, domestication of animals etc., dates from perhaps 7,000 years ago. But the Arayans who entered into the sub-continent from the north-west around 2,000 B.C. acquired the knowledge of not only the Neolithic arts but also metal implements. And they gradually spread from west to the east along the Ganges plain. They were a people who knew the fundamentals of agriculture including irrigation and manuring and used the animal-drawn ploughs. They knew the use of the wheel employing chariots for fighting and racing and carts for hauling.[12]

So it appears that in this region, several thousand years ago there were people possessing a technology sufficiently advanced to support a dense population. The soil and climate were also very favourable for the application of this technology. This resulted in rise of population and heavy crowding in agriculture. And today the picture of the province's population has turned to be that of an agricultural people, long settled in its land and exploiting that land intensively (but not properly). Like other hot alluvial plains of great fertility and adequate water such as the Nile Valley or the Yellow River, the deltaic region of the Ganges and Brahamputra, has an extremely concentrated population. Old records, however, indicate that during the two thousand years before the modern period, population could not have grown here very rapidly.

Sharp rise in population probably started from the middle of ninetinth century. Indo-Pakistan's population trend has been greatly influenced by the people of the fertile regions of the sub-continent, that is, the plains of the Indus and the Ganges. The Gangetic plain (including a great major part of East Pakistan) which constitutes about 14% of the Indo-Pakistan's total area contained as much as 37·5% of its total population in 1941. This means that the past population trend of the province may be guessed from that of Indo-Pakistan. Estimated population of the sub-continent in the past was as follows : 100 millions in 1600, 120 millons in 1800, 130 millions in 1845, 255·1 millions in 1871, 257·3 millions in 1881, 282·1 millions in 1891, 285·2 millionn in 1901, 302·9 millions in 1911, 305·6 millions in 1921, 338·1 millions in 1931 and 388·9 millions in 1941.

Table 11

Population in East Pakistan 1901—1961

In millions

Year	East Pakistan	Pakistan
1901	28.9	45.5
1911	31.6	50.9
1921	33.3	54.4
1931	35.6	59.2
1941	42.0	70.3
1951	42.1	75.8
1961	50.8	93.8

In the year 1941, population of the province was 42 millions which was about 60% of Pakistan's and about 11% of Indo-Pakistan's population in that year. The table 14 shows the density of population of the province in 1941 in relation to other areas. From the table 14 it may appear that population of whole Bengal per square mile in the year 1941 was higher than that of East Pakistan. But if Calcutta is excluded, density of East Pakistan's population would be higher than that of West Bengal.

Tabe 12

Population in East Pakistan since Independence

Year	Population lakhs	Density per square mile.
1951	420	761
1961	508	922

Table 13

Average density per sq. mile in defferent Divisions of the province, 1961,

	Including river area	Excluding river area	Only cultivated area[13]
East Pakistan	922	969	1637
Dacca Division	1277	1360	1857
Rajshahi Division	888	935	1331
Chittagong Division[14]	800	826	1867
Khulna Division	786	876	1507

Table : 14

Density of population of East Pakistan & other regions, 1941

Region	Population (000's)	Area (000's) sq. m.	Population per square mile
East Pakistan	41,966	54.0[15]	777
West Pakistan	28,169	307.0	92
Pakistan	70,135	361.0	194
Indo-Pakistan	388,998	1581.4	246
Bengal	69,306	77.4	779

It will be evident from the table 11 that in the first 30 years from 1901 to 1931, East Pakistan's population increased by 6.7 millions or by 23% and in the second thirty years, that is, from 1931 to 1961, it increased by 15.2 millions or by more than 42%. During the last decade (1951-61) alone, population increased by 21%. This rate of growth is tremendous in view of the fact that at this rate,population of the province will reach 108 millions at the end of 20th century.But with the increased availability of medical facilities and rise of per capita income, the rate of population growth will increase further. Some demographers think that by the middle of this decade, the rate of annual gorwth may reach nearly 3 percent. However, during the last sixty years (1901-61) the province has added more than 75% to its population.

East Pakistan with only 15.1% of the total area of the country has 54.2% of the population. This pressure has a direct effect on the lands as most of the people depend on agriculture. The density of population is increasing thereby reducing the size of land per head. Population per sq. mile has increased from 761 in 1951 to 922 in 1961. It will be evident from the table 13 that Dacca Division has the densest population. If the figure for Dacca city is excluded from the Dacca Division, density per sq. mile of cultivated area becomes higer in the Chittagong Division.

Already 85% of the total land area of the province have been put under agricultural crops including forest trees and there is little scope to bring more lands under cultivation. Besides, with the rise of population more lands are being utilised for construction of houses and roads, markets, industries etc. and these are reducing cultivable lands. The table 15 which has been prepared on the basis of a detailed survey of a village in the Comilla district, may indicate how cultivable land is decreasing and area under houses and tanks is increasing.

Most of the people of the province live in the rural areas and are dependent on agriculture. It has fewer cities and smaller proportion of urban inhabitants than does west Pakistan or the

Indian union. Of the 25 largest cities in the Indo-Pakistan sub-continent in 1941, only one (Dacca) was in East Pakistan and it had a population of only 213000. In 1931 urban population of East Pakistan was only 2.7% and this was against 6.4% of Pakistan and 12.1% of Indian Union (see table 16).

Table : 15

Effect of increasing population on land in an East Pakistan Village.[16]

	1899	1960	p.c. increasing (*i*) or decreasing (*d*)
Number of families[17]	24	77	220 (*i*)
Cultivated area (in acres)	136.1	132.0	3 (*d*)
Area under homestead	3.3	9.5	190 (*i*)
Area under tanks (in acres)	9.4	14.0	49 (*i*)

Since independence the rural-urban pattern has not changed much, which will be evident from the table 17. In 1941, of the total population of Bengal, only 6% were urban, of which about two-thirds were inhabitants of greater Calcutta.[18] On this basis more than 96.4% of the people of East Pakistan were rural in that year.

Before Independence, Hindus were relatively more urban than the Muslims in Bengal. Therefore, due to migration of a good number of urban Hindus from East Pakistan, the percentage

Table : 16
Rural-Urban population—1931

	Rural percentage	Urban percentage
East Pakistan	97.3	2.7
West Pakistan	88.0	12.0
Pakistan	93.6	6.4
Indo-Pakistan	88.9	11.1
Indian Union	87.9	12.1

of urban people should have fallen after Independence. But the slight increase of urban population as found in last Census (1961), may probably be attributed, to a considerable extent, to the immigration of muslims from Indian Union, who were relatively more urban than the Hindus. For example, in 1931, 13 percent

Table : 17
Rural Urban population in East Pakistan (1951-61)

	1951		1961	
	Rural%	Urban%	Rural%	Urban%
East Pakistan	95.6%	4.4	94.8	5.2
Pakistan	89.6	10.4	86.9	13.1

of the Muslims of the sub-continent lived in urban places as against 10.4 percent of the Hindus.

This was because the Muslims were more urban in the places where they were less concentrated. However, as most of the

Muslim refugees were in fact, rehabilitated in urban places of the province,rate of natural urbanisation would perhaps be lower than what was found in the last census.

Population, 1951 and 1961.

in millions

	1951		1961	
	Total	Rural	Total	Rural
Pakistan	75.63	67.84	93.72	81.43
East Pakistan	41.94	40.12	50.84	48.20
Rajshahi Division.	9.34	8.94	11.85	11.35
Khulna Division.	8.31	8.03	10.07	9.64
Dacca Division.	12.57	11.92	15.29	14.22
Chittagong Division	11.72	11.23	13.63	12.99

OCCUPATION

Agriculture is the primary occupation of most of the rural people who are increasing in number every year at a high rate. The decade between 1951 and 1961, has added about 8 million people to the province and most of them have crowded the rural areas. It is found that most of the economically advanced countries have undergone a shift in the occupational structure from agriculture to industry, trade, commerce etc. And as a result, despite the growth of population in these countries, there has been little increase in the ratio of farm population to the availability of land. But no such a shift in the occupational structure has taken place here and so with the growth of population more and more people are automatically coming to find a living in farming. The result is obvious. In this connection, the following statement of Kingsly Davis of the Columbia University (u.s.a.) may reveal the true picture of the province : "The average agricultural holding is quite small. Pasture land is overgrazed. Few forests are left. Rural housing is extremely inadequate. Excess labour is backed up and wasted. Rural indebtness is burdensome. And most lamentable of all, the competition for bare sustenance is very grim even in the richest food growing areas. There should be a surplus of the means of subsistance, but there is none. Everywhere in this fertile land of abundance, the people who live on the soil and grow the food have less than enough to eat, not because the techniques are antiquated (though they are bad enough), but because the numbers are too great." In fact, the rural areas of the province are highly crowded with farm people.

In 1931 agriculture was the occupation of about 83% of the

people of Bengal and amongst the Muslims of Bengal, this percentage was as high as 90[19]. At that time, percentage of the people of Bengal dependent on agriculture was higher than that of Pakistan as a whole or the Indian Union. In 1931, 76.8% of the total rural workers of Indo-Pakistan were engaged in agriculture. In the same year, of the total gainfully occupied males of Pakistan, 70.8% were engaged in agriculture and this was against 68.9% of India. As, East Pakistan is more agricultural than West Pakistan, percentage of occupied males in the occupation of farming was higher in this province. Even in Bengal, percentage of occupied males in the production of raw materials (which were mostly agricultural) was higher in eastern region than in the western region and this will be evident from the table 19.

Table 19

Percentage of occupied males in the major occupational classes of Bengal, 1941.

	Production of raw materials (mostly agricultural)	Preparation and supply of material substances	Public administration and liberal arts	Miseclla-neous.
East Bengal	75.0	13.0	3.4	8.2
West Bengal	53.3	27.3	4.9	14.6

In 1955-56, more than 50% of the total rural active males of East Pakistan were engaged in farming while 26% were ordinary labourers working mostly onfarms.[20] This means that about 76% of the active males were engaged in agriculture. Besides, about 38% males of other occupation groups also spent some of their time in farming. A recent analysis reveals that about 75% of the total civilian labour force of 174.4 lakhs (excluding the women doing only household work) is engaged in agriculture.

Even in urban areas, a good percentage of people depend on agriculture. The 1931 census of India reveals that 10.1% of all city workers of the subcontinent were engaged in agriculture (i.e. for exploitation of animals and vegetation).[21] In East Pakistan this percentage is higher. Most of these urban agriculturists cultivate farm land included within the towns and some of them travel to farms outside the town boundaries.

If the rural families are classified according to the main occupations from which the major portion of the income is derived, it will reveal that 50% of the rural families are getting most of their income from farming (see table 20), while 25% grouped under ordinary labour are mostly agricultural wage earners.

Table 20

Occupational distribution of families, (1955-56) on the basis of major incomes[22]

Occupation	Percentage of families
Farming	50
Ordinary labour	25
Trade	5
Cottage Industry	4.5
Others	15.5

Table 21

Percentage of families in other major occupational groups adopting farming as a subsidiary occupation

Occupation	Percentage of families
Ordinary labour	47
Trade	46
Cottage industry	51
Others	35

The group under the ordinary labour consists mostly of unskilled agricultural labourers who do not have adequate land or any land under their possession and so farming is not their major occupation. This group has originated from the farming community and depends mostly on others' farms for work. It will be evident from the following estimates that a large proportion of families are living mainly or entirely on agricultural wages :

Sources of estimates	Families dependent mainly or entirely on agricultural wages (in percentage)
Land Revenue Commission(Bengal), 1939-40	22.5
Census ofIndia, 1941 (Bengal)	26.8
Famine Enquiry Commission(Bengal), 1945-46	26.6
Dacca University Socio-Economic Survey Board, 1955-56(East Pakistan)	25.0

Other occupational groups still adopt farming to a considerable extent, as a subsidiary occupation (see table 21).

Most of these families were dependent on agriculture in the recent past, but factors like uneconomic holding, poor income from farm etc. have forced them to earn their living elsewhere. Even the families who now obtain their major income from farming are gradually taking up other occupation. About 44% of the families getting major porion of their income from farming have already taken up subsidiary occupations though the income derived by them from these additional sources is yet small.

As a matter of fact, population of the province is greatly agricultural. If the agricultural wage earners are included, all other groups of population will represent only a very small portion. The famine Enquiry Com mission (1945), on the basis of data compiled from the census of India 1941, remarked in the Commission's report that "all persons deriving the whole or a major part of their income from the

Table 22

Districtwise agricultural population of East Pakistan, 1961

Population in lakhs

District	Area in sq. miles	Total population	Rural population	Agricultural Population		
				Total	Farm populatoin	Population having only live stock holdings
Dinajpur	2,609	17.10	16.38	13.63	12.72	0.91
Rangpur	3,704	37.96	36.37	31.91	30.72	1.19
Bogra	1,502	15.74	15.27	12.29	11.67	0.62
Rajshahi	3,654	28.11	26.91	23.59	22.02	1.57
Pabna	1,877	19.59	18.60	14.69	14.45	0.24
Kustia	1,371	11.66	11.03	8.81	7.20	1.61
Jessore	2,547	21.90	21.15	20.34	19.13	1.21
Khulna	4,652	24.49	22.76	19.32	18.67	0.65
Barisal	4,240	42.62	41.42	33.78	32.81	0.97
Mymensingh	6,361	70.19	67.78	57.61	56.35	1.26
Dacca	2,882	50.96	43.42	32.74	30.24	2.50
Faridpur	2,694	31.79	31.00	25.63	24.78	0.85
Sylhet	4,785	34.90	34.19	24.70	24.32	0.38
Comilla	2,594	43.89	42.50	35.76	35.48	0.28
Noakhali	1,855	23.83	23.49	20.45	20.08	0.37
Ctg. Hill Tracts	5,093	3.85	3.62	2.64	2.59	0.05
Chittagong	2,705	29.83	26.10	17.92	16.56	1.36

cultivation of land, whether as owners of land, cultivating tenants or labourers working on the land, together with the members of their families dependent on them, amount to 72 percent of the total population of Bengal". This percentage will be higher if only the rural population is considered and it will be still higher in East Pakistan which is more rural in character than West Bengal. However, this does not indicate the accurate size of agricultural population of the Province. For, inspite of the fact that most of the small farmers are partly dependent on agricultural wages, the figure has included some of the landless labourers dependent only on agricultural wages and on the other hand, has excluded some of the small farmers. In 1955-56, 50 percent of the rural families were found to operate farms for major portion of income, while 23% for additional income[23]. Recent statistics based on Pakistan Census of Agriculture 1960, indicates that farm population constitutes more than 78% of the total rural population. These figures, of course, do not include those families who are to live entirely on agricultural wages as well as those who raise only livestock and possess no cultivated land. If livestock holdings are included agricultural population will represent more than82% of the total rural population. Of the total population, agricultural population comprises 78%; and if the persons dependent entirely on agricultural wages are included, this figure will probably increase by 10%. Agricultural population, however, varies from district to district according to size of district and availability of lands for cultivation. The Mymensingh district has the biggest numbers of agricultural population while Chittagong Hill Tracts district has the smallest number (see table 22).

MOVEMENT OF FARM PEOPLE

Movement Towards New Regions

Economic factors play most important part in normal mass migration. They work in both a positive and a negative manner. Unfavourable economic conditions may force move ment of people from an area and favourable economic conditions may draw them in. According to Goodrich, people move from areas of low economic opportunity to areas of high economic opportunity. Of cource, high cultural opportunities also attract migrants. These factors are also no doubt linked up with birth rate which has also influence over migration. Generally speaking, areas with low standard of living, low cultural opportunities, and little opportunities for climbing the social ladder are areas with high birth rate and a large exportable group of people. Similarly areas with high per capita wealth, high cultural acheivements, with many opportunities for vertical mobility, are usually areas with low birth rates, necessitating the importing of considerable number of people and also offering relatively sufficent opportunities for jobs, and for social and educational advancement.

In view of these principles and in consideration of the fact that the extremely high density of farm population on arable land, the excessive character of rural indebtness, the progressive fragmentation of holdings, the inefficient methods of cultivation and stock raising, the uncertainty of foreign and local markets--, all conspired to make the average rural persons life very hard, one might expect an irresistabe mass movement in this region. But the astonishing thing is that the farm people here are not as dynamic as one should expect. People of Indo-Pakistan are

characteristically immobile. In 1931 only 3.6 percent of the population of the subcontinent lived outside the province or state in which born. This was against 24 percent of the Australian people in 1934 and 22.5 percent of the u.s.a. people in 1940, living outside the province or state of birth. However, the degree of mobility was probably relatively high in East Pakistan in comparison to other areas of Indo-Pakistan. It is not known how many people in the past migrated from this province to other countries. It is estimated that during the century between 1834-35 and 1934-35, only six million people migrated from this subcontinent to other countries, inspite of internal economic pressure and external demand for man power. Majority of these people were rural in origin and worked in farms in the tropical British colonies.

But people of this province did not generally like to move to distant places. They, however, constitute a good portion of the total immigration in the eastern and south-eastern countries. Some people of the districts of Noakhali, Sylhet and Chittagong have migrated to a few distant countries. But migration of people from this province to Burma which received the highest number of immigrants from this sub-continent was relatively big and this was due to the contiguity of the two regions. During the period between 1852 and 1937, there were about 2.6 million Indo-Pakistan immigrants in Burma. East Pakistan farmers comprise a large share of this number, who have cleared up jungles, reclaimed new land and brought under cultivation vast areas which were formerly inaccessible. In fact, the eastern region of Burma owes its development to a contingent of rural people of East Pakistan who migrated there long back.

East Pakistani farmers also played important part in internal migration within the sub-continent. In the begining, many people moved to the tea gardens of Assam where tea cultivation was started as early as in 1840 and they worked there as estate workers. "The indigenous Assamese could not be persuaded to leave their farms and villages to work on the gardens, and there were few landless labourers to be found in the province." It may

be pointed out that in 1931, eight districts of Assam and two districts of Bengal (Darjilling and Jalpaiguri) had alone 82 percent of all workers principally occupied in estate cultivation in the whole sub-continent. But Assam was also one of the few places left in the sub-continent where extensive tracts of rich agricultural lands awaited cultivation and the province became the destination of a swarm of indigenous farmers seeking new lands to cultivate. Due to Bengals' long-standing congestion of population, scarcity of land and contiguity with Assam, Bengal supplied the highest number of people in this migration and these people moved there mostly for farming. This farmer migration started as early as about 1900 or so. At first the farmers entered into the nearby district of Goalpara and then they spread up the Brahmaputra valley and gradually covered the lower and central districts. In the Brahmaputra valley, the Bengal-born settlers increased fourfold between 1911 and 1921. By 1931, the number of persons born in Bengal but settled in Assam reached 575,000. Most of these people came from the eastern districts of Bengal, of which Mymensingh was the most prominent one. The table 23 will show how the people from Mymensigh came to constitute a large percentage of the Bengali immigrants in Assam from 1911 to 1931.

Table 23

Bengal-born population in Assam, 1911-1931[24]

Year	Total born in Bengal	Born in Mymensingh	Percentage of Assam valley Bengalees born in Mymensingh
1911	194000	37000	19.0
1921	376000	172000	45.7
1931	575000	311000	54.0

Of most of these Bengali settlers, propably 85 percent were muslims and they along with their descendants represented a large and permanent addition to the population of Assam. As a result,

the muslim population of Assam increased between 1881 and 1931 by 109 percent. In 1891, Sylhet was 47 percent Muslim and by 1941 it became 61 percent Muslim.

These muslim farmers brought about great developments in Assam particularly in the field of agriculture. The 1931 Census of India (report on Assam) described their activities in the following manner:

"They have opened up vast tracts of dense jungle along with the south bank of the Brahmaputra and have occupied nearly all the lands which are open for settlement in this tract. These people have brought in their wake health, industry, and general prosperity..... They have improved the health of the country side by clearing the jungles and converting the wilderness into prosperous villages. Their industry as agriculturists has become almost proverbial....."

"Not having sufficient land of their own in their home districts and leading a life of difficulty with the drawbacks peculiar to under-tenants of Bengal Zaminders in overcrowded villages, it was quite natural for these industrious agriculturists to be attracted in large numbers..... The local Assamese at first did not like the advent of these peoples in their midst but gradually as they came to see their better side—their industry, their knowledge of agriculture, their contribution to the general prosperity—their prejudices and dislikes are begining to disappear."

Due to political and other reasons, the agricultural migration had already begun to taper off by the time of Partition. Between 1931 and 1941, the growth of the Assam population was mainly a result of natural increase rather than immigration. [25]

However, the extent of migration from this province was small in comparision to the total population. But this, no doubt, brought some relief to the population pressure in the past. After Independence, migration of people to other countries has almost stopped. Rather, the situation has now worsened due to recent immigration into the province, of not less than ·5 million Indian Muslims who were mostly farmers and were forced to

quit India where they had been living for generations before Independence. In1959 only 350 agricultural families have, however, migrated to West Pakistan. Movement of farm people has now greatly decreased and is confined within the province. Jessore district which had formerly considerable amount of culturable waste lands, was a place of attraction for the farmers for a long time. There is considerable migration towards Chittagong Hill Tracts also. The 1961 Census of Pakistan recorded 33.9 percent increase of population in Chittagong Hill Tracts in a decade due to the rapid opening up of its interior and the kaptai hydro-electric project, and 33.5 percent increase in Jessore due to farmer's movement and migration from India. A slow movement of farmers towards the districts of Dinajpur, Faridpur, Chittagong etc. is now-a-days noticed. Movement to Sylhet which received a good number of people from the districts of high densities such as Comilla and Noakhali has now come almost to an end.

Movement Towards Urban Areas

Farmers of East Pakistan are generally conservative. They do not like to leave their farms unless they are forced to do so under hard and painful circumstances.

As mentioned above, some farmers have, however, migrated to new places. But their migration was mostly aimed at acquiring new lands for cultivation. Farmers are in fact highly hesitant to change their traditional occupation and to earn livelihood from new sources. Movement of farm population to urban areas is very poor as will be revealed from the rural urban ratio prevailing in the province for a long time. But why the farm people of the province are greatly immobile? Why do they look for village even after taking up a job in urban areas? There may be many reasons—social, economical and political. But the important reasons are probably as follows:

(i) Poor Industrial growth

Industrial growth in the province was extremly poor. In pre-Independence days, most of the Industries of Bengal grew in and around Calcutta which was away from majority of the people of the province. The Area having high densities were lying on the eastern side of Bengal and the people of these areas had poor access to Calcutta. Though Dacca was an old and big city in this part of the province, it could not prosper during the period of the British rule. It had rather undergone degeneration so far its industrial resources are concerned. The tarrif policy in the British Empire was greatly influenced by Britain's economic interests. From 1700 to 1825 Britain levied high protective duties on the excellent textiles made by Indo-Pakistani handicraft while insisting that British goods enter this country almost duty free. When England increased her textile production, she flooded the unprotected market of the sub-continent with cheap cloth and ruined the native handicraft industry. "Between 1818 and 1836 the twist imports into India rose in the proportion of 1 : 5200. In 1824 the exports of British Muslin to India hardly amounted to one million yards. By 1937 they exceeded 64 million yards. At the same thime the population of Dacca, world famous for its muslins, decreased from 150,000 inhabitants to 20,000"[26].

This probably indicates the condition of almost all cities of the province in those days. "..... the British Government of India in collaboration with British economic intersts, ruined the handicraft industries of India, and thus impoverished and forced into an already crowded agricultural situation countless thousands of artisans"[27].

This is very true particularly for East Pakistan. Though Eastern Bengal was the biggest producer of jute, there was no jute industry in this region. As a matter of fact, industrial growth and development of cities started here only after Independence. At the time of Independence there were only 10 cotton mills, 5 sugar mills, 115 tea estates, one cement and 2 match factories.

And now the number of industrial establishments have increased to 1045 having 168000 production workers (see table 24).

Table 24

Industries in East Pakistan[28]

Year	No. of Industrial establishments	No. of production workers[29]
1954	581	53,000
1955	652	79,000
1957	776	89,000
1958	921	120,000
1959—60	988	139,000
1960—61	1010	160,000
1961—62	1045	168,000

[Inspite of the fact that farm people are relatively immobile, migrants from farm constitute the major portion of the workers now employed not only in industries but also in trade, commerce and other organisations. With the growth of industries, migration from farms to the urban areas will also incresase. But the industrial demand will not probably create any visible effect in near future on the rural population because of the high rate of increase of rural population.

Cheap raw materials available in the province are not yet fully utilised by industries, which will be evident from the fact that only small portions of the total productions of jute and sugarcane are cousumed by the local mills (see table 25)

Table 25

Consumption of jute and sugarcane by local Mills

Year.	Jute		Sugarcane	
	Production (lakh bales)	Mill consumption (lakh bales)	Production (lakh tons)	Mill consumption (lakh tons)
1951—52	75.00	0.23	34.25	4.42
1953—54	45.00	2.06	39.67	3.04
1955—56	68.00	7.34	39.75	5.66
1957—58	62.00	9.41	37.65	5.66
1959—60	54.00	15.27	36.11	7.78
1961—62	69.66	N.A.	43.80	N.A.

But as it is considered essential to reduce the population pressure on farms, efforts must be made to push up industrial growth throughout the province. Besides, it is also essential to give proper facilities to the workers in the urban areas so that they do not feel it necessary to go back to the farms. Unfortunately the existing movement of the farm people has some undesirable sides also. Generally it is the group of the male youth who leave the villages most. This deprives the farms of the persons who have the maximum working capacity and so farms are being left mostly with the old, the childern and the females. As the old and the females are the most conservative sections of the rural population, rate of adoption of new techniques in the farms has been poor. The situation has worsened due to the fact that the highly educated and intelligent persons of the country, most of whom

are the sons of the farmers and have got their education at the cost of the poor income from the farms, live in cities even in old age. Only the unskilled and poorly educated farm people who are unable to live in cities after termination of their job there in old age, return to the villages. As a result, the farmers are left in their traditional out look with few persons in the village, who can motivate and guide them in modern lines.

Apart from this, withdrawal of educated young persons from farms has been a cause of great drainge of rural wealth in terms of money. In a country like U. S. A. where farm population comprises a small portion of total population, the net migration from the farms during the period 1920-30 represented a contribution of about $ 14,000,000,000 at the conservative rate of $ 150 for food, clothing, education, medical services etc. for a person upto the age of fifteen. This contribution was equivalent to the total value of wheat crops plus half of the cotton crops of U.S.A. during these years. "Nor is this all. When the farmer and his wife grow old and die, the estate is devided among the childern. During the decade 1920-30, about one-fifth of the farmers and their wives died, and their estates were distributed among the childern. One third or more of the childern had moved to town, and many of those childern who remained on the farms had to mortgoge it in many cases to pay the brothers and sisters who who lived in the cities, their share of the estate. A rough estimate indicates that between $ 3,000,000,000 and $ 4,000,000,000 was drained from the farms to the cities.....during the decade 1920-30 incident to the settlement of estates"[30]. In fact, in that highly industrialised country, the proportion of wealth from city flowing ruralward was much less than the flow of wealth from farm to city[31].

From this, the magnitude of rural wealth moving cityward may perhaps be guessed for this country which is extermely agriclutural and which depends mostly on rural areas for supply of urban workers. More than 88.5% of the total literates of the Province are rural and a good number of them especially those

who have formal educational attainments are gradually moving towards the urban areas. Of course, a good number of farm youths working in urban areas remit a portion of their income to the villages. But this amount is small in proportion to the amount of money they spent from farm account in their early life.]

(ii) Occupational disadvantage

Farming here generally requires no travel, rather it requires constant attention. This is because farm is managed with animals equipments and other materials which are locally available.

(iii) Lack of finance

Most of the farming is done at subsistance level that allows little surplus to be accumulated to meet the cost of travel or of change of residence or occupation.

(iv) Early marriage

So early does an average young farmer marry, so soon does he have children, so close are his family bonds, that there is no period when adolescent wonderlust can express itself. Adult status and responsibility in the village tend to be assumed almost just after puberty.

(v) Law of Inheritance

The inheritance laws call for equal division of property amongst the sons of the farmer and there is no group of sons forced to leave by-an inferior right to inherit. Thus they automatically follow the foot prints of the fore-fathers in selecting occupation.

(vi) Diversity of dialects and culture

Though people of the province speak in Bengali, marked difference in language is noticed between various regions and also between the urban and rural areas. Also there are at least

two more dialects prevailing in Chittagong Hill Tracts and southern parts of Chittagong. Besides, an individual moving from one locality to another encounters many customs different from his own, and consequently encounters prejudice.

(vii) Lack of Education

The percentage of literary is very poor in the Province and the situation is worse in the rural areas. Only 20.2 percent of the population of 5 years and above are literate in the rural areas against 45.7 percent in the urban areas. And amongst the female, only 9.7 percent are literate in the rural areas against 31.9 percent in the urban areas. Besides, 15.8 percent of the total literate population do not have any formal educational attainments and most of them are rural inhabitants. This means that the educational standard of the rural people is very poor. And as a

Table 26

Literacy in East Pakistan, 1961.

		Percent of population of 5 years and over.		
	Percent of total population	Rural-urban combined	Rural	Urban
Both sexes.	17.6	21.5	20.2	45.7
Male.	26.0	31.5	29.9	54.8
Female.	8.6	10.7	9.7	31.9

result, an average farmer's ignorence of what is beyond the confines of his very limitted environment tends to burden him with superstitions and fear of uncertainly. Lack of education also gives rise to difficulties in making contact and relation with others, which is required by a migrant.

(viii). Indifferent reaction to adverse condition

East Pakistani farmer does ont react to adverse condition in the same way as a western farmer. If conditions of absolute famine prevail he may migrate in large numbers, but as long as the starvation is gradual, he tends to remain at home.

(ix) Rural attachment

Farmer defines values of life in his own way. To him the agricultaral way of life in the village is a easier way of life, and the close asscoiation with his relatives and neighbours is highly desirable. He is willing to make a considerable economic sacrifice in order to retain these advantages. Homesickness weighs heavilly upon him and he wants to live there at almost any price. Even the persons who were of farm origin but now live in cities, consider their village home as the most reliable shelter.

(x) Joint Family

This system to some extent, limits the social mobility and social change because it binds the individual to others on the basis of birth, forces him to contribute to the support of a large group independently of their ability and assures control of the younger generation by the elders. This also partly retards free competition and individual mobility associated with a dynamic industrial economy. Though agricultural population consltitutes 78% of the total population of the province, agricultural households comprise only 71% of the total house holds. The difference is due to the prevalence of joint family system and comparatively large size of family amongst the agricultural people.

(xi) Seclusion of women

Farmers tend to seclude their women. Women are less literate, more conservative and more immobile, and therefore women tend to strengthen tradition and retain rural immobility.

(xii) City repulsion

So long the inducement the city has had to offer has been almost exclusively economic. The 'glitteriing life' of the city, the greater opportunities, the wider social horizon—all have meant little to the average villager. He has generally come to the city for one reason only—to find remunerative work—and since this was a means rather than an end in itself, he has not regarded the city as a permanent place of abode. He has tended to stay in the city only temporarily, until he had an opportunity to return to the village. But there were also many things in the city which were repellent. Housing conditions, working conditions, recreational facilities, and sanitary conveniences have all been costly and unwholesome. The development of industrial cities in the subscontinent under conditions of "laissez-faire' economy in an extremely competitive world, has produced some of the worst urban conditions ever known.[32] These urban conditions make the villager want to stay in the city only so long as he has to. Besides, due to these conditions and his poor income, he is unable to bring his family there. Wives and children are left at home. Poor opportunity for female labour further reduces the possibility of bringing the family. Hence the East Pakistan's cities reveal much distorted sex ratio (See table 27). It may be pointed out that in 1931 the sex ratio of Calcutta was more than 200 males per 100 females.

Table 27

Sex ratio in the urban areas of East Pakistan, 1961

Areas	Males per 100 females
East Pakistan (Rural & urban)	108
East Pakistan (Urban)	142
Dacca city	150
Narayangonj city	169
Khulna city	178
Chittagong city	188

The failure of the worker to bring his family makes the city all the more unattractive as a place of residence, and increases prostitution and dembralizing recreation in the city [33] and later on spoils the moral tranquility of the villages.

As a consequence of his distaste for urban life, the villager who has migrated to the city tends to keep in contact with his local village. He often returns to the village when he is out of work, when he is sick, when an important ceremony is taking place or when he is needed there. As a matter of fact, rural home is a sort of insurance against disaster. "In sickness and in maternity, in strikes and in lockouts, in unemployment and in old age the village home is a refuge for many"[34]. As most of the persons migrating to city do not have higher education nor proper skill, they do not get suitable and permanent job, and hence in the long run they are to come back to the village. Only the few highly educated persons and moneyed men who are earning suitable remuneration in the city, do not generally return to the village.

Farm household and size of holding

Agriculture is the main source of income for the rural families. But a large number of rural families are landless. According to the Dacca University Socio-Economic Survey Board (1956), 24.5% of the rural families do not have agricultural land and 64% own less than 2 acres or are landless. The Pakistan census of agriculture (1960) reveals that about 22% of rural people do not have land for farming. A comparision of the findings of the Dacca University Socio-Economic Survey Board (1956), with those of Land Revenue Commission (1939-40) and Famine Inquiry Commission (1945) (See table 28) will reveal that the proportion of small land holders is increasing while that of the big land holders is decreasing. This means that average size of holding is decreasing. According to the Bengal Provincal Banking Inquiry Committee's

Report, the the average size of holding was 5.21 acres in the early thirties and the same was put at 4.36 acres by the Land Revenue Commission in 1940.

Table 28

Clasification of families according to size of holding (in P.C.)

Sources of estimates	0-2 acres %	2-5 acres %	5-10 acres %	10 acres & above %	Total %
Land Revenue Commission Bengal (1940).	46	28.6	17.0	8.4	100
Famine Inquiry Commission Bengal Bengal (1946)	50	27	15.5	7.5	100
Dacca versity Socio-Economic Board (1956) East Pakistan.	64	26	8.7	1.3	100

This size of holding was considered small to properly maintain a family. The following extract taken from the report of the Famine Inquiry Commission which recorded its observation while giving estimates of families under different sizes of holding, are worth mention here :—

"These estimates are important, for they afford a clear picture of the classes of cultivators who live even in normal times, on the margin of subsistence.... The general consensus of opinion among witnesses who appeared before the Land Revenue Commission, Bengal, was that '5 acres would be the minimum area required to keep the average family in reasonable comfort; but if the land is capable of growing nothing but aman paddy, the area required would be about 8 acres'. The Commission considered these figures to be substantially correct."

"The Land Revenue Commission also observed that about half of the holdings in Bengal are barely sufficient for the maintenance of the families which own them. This, we have no doubt applies to all those whose holdings are less than 2 acres, but the same would also apply to some among the families which cultivate between 2 and 5 acres each." It may be pointed out that since the publication of that report, the number of families with small holdings has considerably increased. In the United States, the figures generally accepted as being the average requirement per head of population are 2 acres under agricultural crops, 3 acres under humid pasture and 3 acres under forest. Some specialists think that in monsoon Asia, a farmer would need for maintenance of health and efficiency a minimum of one acre of cultivated land per head. But by any standard, per capita availability of land is far below the requirement in the province, the average being .4 acre of cultivated land and .1 acre of forest land. There are now as may as 6139480 farm-house holds, but the scale of farming per farm house-hold is very small, cultivating slightly more than 3 acres on average. 51% of the total farm house-holds work on their lands under 2.5 acres while merely 4% cultivates more than 12.5 acres. 53% of the farm families have lands from 1 to 5 acres (See table 29). Besides, there are 3.2 lakh livestock holdings which have less than 2 livestock units per holding and possess no cultivable land.

Table 29

Number & percentage of farm households by size of holdings, 1961

unit—1000 households

Year	Total	%	Under .5 acre	%	.5—1 acre	%
1960	6139	100.0	802	13	689.84	11

1-2.5 acre	%	2.5-5 acre	%	5-7.5 acre	%
1677.41	27	1615.02	26	698.45	12

7.5-12.5 acre	%	12.5-25 acre	%	25-40 acre	%	40 acre & avobe	%
442.36	7	187.79	3	21.17	.34	4.61	.07

When the farmers are classified according to the nature of tenure, it reveals that owner-cum-tanents have the biggest size of holdings (4.3 acres), while the tanents have the smallest holding (2.4 acres). The tanents who constitute 2% of the total farm households own only 1% of the total farm area (see table 30).

Fragmentation of Holding

Subdivision of farms and fragmentation of plots give rise to a serious agricultural problem in East Pakistan. This has taken place mainly due to the division of property among the members of the family according to the Law of Inheritance. To some extent, it has been also due to sale or mortgage of land. In the later case, a portion of the plot demarcated out as mortagaged may have permanently passed into the hands of the mortgagee. To a very small extent, subdivision has also taken place through mutual exchange.

At the time of division of landed property, efforts are however, made to avoid subdividing the plots if an equitable distribution is possible, keeping in view mainly the fertility of the plots and their distance from homestead. But in many cases, this cannot be done, specially when the number of plots is small as compared to the number of sharers. As a result, even between

two brothers, a small plot may be divided into four, each taking the corner peices diagonally situated[38].

Table 30

Number, area and average size of farm holding, classified by tenure[37]

Tenure	Farms	
	Number	P. C.
Total farmers	6139480	100
Owner farmers	3731110	61
Owner-cum-tenant farmers	2308330	37
Tenant farmers	100040	2

Farm area			Cultivated area		
Total (acre)	P.C.	Average size (acre)	Total (acre)	P. C.	Average size (acre)
21725827	100	3.5	19138139	100	3.1
11653910	54	3.1	9992386	52	2.7
9829813	45	4.3	8914536	47	3.9
242104	1	2.4	231217	1	2.3

The result is that now 90% of the total farms, covering 96% of the total farm area are fragmented and the number of fragments have exceeded 10 in a considerable number of cases. Number of fragments increases with the increase of farms in size. 77% of the large farms (12.5 acres and over) have 10 or more fragments while

the small size farms (under 2.5 acres) have mostly 2-5 fragments. Besides, 97 % of the large farms are fragmented against 83 % of the small farms. Percentages of farms having different number of fragments have been given in table 31.

Table 31

Number and percentage of farms classified by fragmentation

Fragments	Number of farms (in lakhs)	Percent
Not fragmented	6.2	10
2 to 3 fragments	12.9	21
4 to 5 fragments	10.8	17
6 to 9 fragments	13.9	23
10 to more fragments	17.6	29
All farms	61.4	100

On average a farm has 6-7 fragments and the size of an average plot is only $\frac{1}{2}$ acre.

If the existing system continues, the number of fragments will be increasing further. In the course of two generations, number of agricultural plots have been found to double through subdivisions[39]. Most of the farms have been reduced to uneconomic size and majority of the plots are now too small for mechanised farming. Besides, the plots comprising a farm are lying scattered in different places within a village or within two or more villages. This

requires sufficient time for farm operation and involves many other problems.

Subdivision of plots requires construction of new 'ails' (raised boundaries) which consume some valuable portion of the cultivated land. It has been found from a detailed survey of a village in the Comilla district that "a little over 3 % of the cultivated areas" are occupied by the ails[40]. On this basis, about 7 lakh acres of land which could produce about 20 million mds. of agricultural products are now lying idle on account of the ails. However, Government have recently introduced a pilot scheme in the Dinajpur district for consolidation of holdings. Probably Government will take further step to bring about significant acheivement in this respect.

AGRICULTURE IN NATIONAL ECONOMY

Pakistan is predominantly agricultural and East Pakistan is the most important region in this respect. 95% of the people of East Pakistan live in rural area and more than 82% of them have agricultural profession. Agriculture accounts for a large share of the gross national and regional product which will be revealed from the table 32.

Table 32

Importance of agricultural produces, in gross national and regional product, 1959—60[41]

In million rupees

	Gross product of Pakistan.	Gross product of East Pakistan.
Agriculture	12977	7493
(a) Crops	9506	5850
(b) Livestock	2415	631
(c) Fishery	1023	992
(d) Forestry	33	20
Others	10495	3900
Total	23472	11393
Proportion of agricultural product to total gross product	55·2%	65·7%

Table 33

Agriculture in national and regional (East Pakistan) income (at constant prices, average being of 1949-50 to 1952-53).

in million rupees

	National Income			Regional Income (EP)		
Year	Total	Income due to agriculture	percent	Total	Income due to agricul-ture	Percent
1949—50	17542	10696	61	8685	5879	68
1950—51	18575	11072	...	9184	6129	...
1951—52	18522	10850	...	9313	6164	...
1952—53	18761	11239	...	9603	6554	...
1953—54	19727	11955	...	9719	6671	...
1954—55	20064	11858	...	9899	6694	...
1955—56	19586	11335	...	9358	6214	...
1956—57	20882	12224	...	10369	7024	...
1957—58	21011	12099	...	10158	6374	...
1958—59	20850	11819	...	9992	6486	...
1959—60	21683	12578	58	10642	7168	67

It will be evident from table 32 that though 78% of the total population of East Pakistan depends directly on agriculture, agriculture accounts for only about 66% of the gross product of the province which speaks of poor per capita productivity of the agriculturists. Agriculture constitutes the major portion of the national income. In 1949-50 it represented about 61% of the national income while in 1959-60 it was 58%. On the basis of regional income of East Pakistan, agriculture represented as much as 68% of the total provincial income in 1949-50 and 67% in 1959-60 (see table 33)

Agricultural produces earn most of the foreign exchange. In the year 1961-62 total national export was valued at Rs. 1843·4 millions out of which East Pakistan's share was Rs. 1300·6 millions (except materials worth Rs. 402 millions exported to West Pakistan). Of this amount, the share due to export of raw jute, jute manufactures, tea and hides & skin alone was Rs. 1216·3 millions (see table 34)

Table 34

Importance of agriculture in foreign exchange earning[42]

(in million ruppees).

Year	Total national export	Export from E. Pakistan to		Export of raw jute, jute products, tea, hide and skin, to foreign countries.
		Foreign. Countries	West Pakistan	
1959-60	1842·7	1079·6	352·9	1041·1.
1960-61	1799·4	1259·2	363·5	1185·9
1961-62	1843·4	1300·6	402·0	1216·3

Farmers' economic condition

Income:

The small scale farming mostly carried on in traditional old methods is unable to secure sufficient income for a household.

In 1931-32, the average per capita income in the British India was estimated at Rs. 65 only[43]. In 1940, the average wage per day for an able-bodied unskilled labourer was found to be only six annas (about 14 cents). These figures were for both rural and urban population of Indo-Pakistan and so rural income was less than this. The daily wage of an unskilled agricultural worker now varies from Rs. 0·75 to Rs. 2.0. It may be noted that an agricultural labourer earns less than half of the amount earned by an industrial worker. According to an economic survey conducted by the Govt. of Pakistan, per capita annual income of a Pakistani was found to be Rs. 247 in 1959-60. Per capita income of East Pakistan is less than that of west Pakistan and the difference is estimated at about 25%. Per capita income of the Nation at current prices is, however, higher and this was Rs. 304 in 1959-60 and Rs. 341 in 1961-62 (see table 35). The income for the farm population will, however, be less than this. An average farmer's agricultural income is relatively small to cost of farm management, which togather with living expenditures and public imposts excceds that small income, leaving chronic deficit behind.

Table 35

Per capita national income[44]

	1950-51	1954-55	1959-60	1960-61	1961-62
At current prices	234	217	304	318	341
At constant prices (average of prices 1949-50 to 1952-53)	244	243	247	251	261

On the basis of a sample survey conducted in 1960, the Central Statistical Office, however, thinks that rural families of East Pakistan could have saved something, had there been no heavy expenditure on account of house reconstruction after every

natural calamity. "Majority of the people in the rural areas live in huts of thatched roofs and the walls may be of mud or bamboo tattees. These dwellings are so frail that they can hardly withstand the natural calamities which perennially affect different parts of East Pakistan in the form of floods, cyclones and tornadoes. This means that family savings which could otherwise go into capital formation are very often absorbed by the need to reconstruct these shelters"[45]. In fact, the agricultural families are to spend a considerable amount of money out of their poor income for reconstruction of their dwellings as well as for rehabiltiation of their farms every year after flood or cyclone which is a recurring affair in the province. This has brought his standared of living down to a miserable level. Even when the living conditions of the farmers are measured by a very conservative standard, they do not show anything satisfactory.

Level of living

The Dacca University Socio-Economic Survey Board (1956) has classified the living conditions of the rural families into 4 levels. The first level of living indicates a condition in which material necessities of life could be satisfied with less difficulty. This does not mean that families under this level are in comfort The fourth level implies a condition in which the family has "just sufficient to keep itself alive and no more[46]." The other two levels represent conditions in between these levels. The rural families who get major part of their income from farming fall mostly under the second and third levels while the families having most of their income from ordinary labour fall greatly under third level (see table 36). As these two groups from major part of the farming community, one may guess from this the standard of living of a farmer which in most cases, varies between third and second levels. Besides, the pattern of expenditures under these different levels may speak of the inadequacy of a house-hold income.

Most of the household income is spent for food consumption which varies from 72% of the total expenditure in the

first level to more than 89% in the fourth level (See table 37). This probably indicates that many rural families are required to spend their income almost in full on food items, but as they cannot avoid some important items, such as housing, clothing, etc.

Table 36

Percentage of rural families according to main occupation and level of living.

Main Occupation	Levels of living				
	Ist level %	2nd level %	3rd level %	4th level %	Total
Farming	13·4	47·0	38·3	1·3	100
Ordinary labour	0 8	14·6	70·7	13·9	100

Table 37

Pattern of house-hold expenditure

Level of Living [47].	Expenditure under different items (in p.c. of total expenditure)				
	Food and toilet.	Clothing	Housing	Furniture, utensils, etc.	Total.
Ist level	72·0	22·2	0·9	4·9	100
4th level	89·1	7·3	2·2	1·4	100

they are forced to retain a small portion of their income for these items. According to an estimate made by the Central Statistical

Office, the pattern of family expenditure in the rural areas in 1960 was as follows: Food 71 %, clothing etc 5 %, house and housing 12% and misc. 12%.

A good number of farmers are, howervr, trying to improve their highly dificient budget by adopting subsidiary occupation as it is difficult to meet family requirements from farm income. Even in Japan where small scale farming is generally practised, average cash receipt from farming per farm house-hold amounts only to 155258 yens whereas living expenditure in cash alone per farm house-hold amounts to 185556 yens [48]. And therefore the Japanese farmer is to find sources of income in occupation other than agriculture, such as sericulture, milk produc tion, etc. About 61% of the farm families of East Pakistan have taken up some kinds of subsidiary occupations and more than 50% of these families get most of their income from non-agricultural occupation [49]. But farmer's total income from both agricultural and non-agricultural sources can hardly meet their house-hold requirements.

Rice and other important food crops produced by the average farmers are generally consumed by the family, leaving small or no surplus for sale. Price of jute which has great influence over farm house-hold economy, has been most unstable, and very often, the price has gone far below the level of cost of production. Price of other agricultural products is also unfavourable for producers, as compared with commodity prices of other industries. Besides, the farmers can not store their products for long, whicln results in disposal of the products at low price, and the small income the farmers get, is only seasonally available. Moreover crop failures due to drought, flood, infestations and other natural calamities which appear not rarely, worsen their economic condition.

Hence a good number of farmers are forced to incur disinvestment. It is found that about 45% of the rural families are to sell some of their assets during a year. The important assets commonly sold are land, cattle, ornaments and utensils. But this is not all. A greater number of rural families are to borrow money.

Loans and indebtness

According to Pakistan Census of Agriculture 1960, 49 % of the farm families are in debt and each of these farmers has a debt of Rs. 305 on average. This speaks of a precarious economic situation of the farmers. Most of the indebted families had to borrow afresh before they could have repaid the old debt in full. The old debt appears to be roughly one-third of the total outstanding debt [50]. It further appears that about 69 % of the total borrowings were required for family expenditure, the real productive expenditure being small in comparison to this (see table 38).

Table 38

Borrowings during last one year, classified by main purposes[51] of expenditure

Purposes	Cases of borrowing in P.C.
Family expenditure.	69.3
Capital expenditure on farming.	9.3
Current expenditure on farming.	10.4
Non-farm business expenditure.	8.3
Repayment of debt.	2.1
Other miscellaneous purposes.	17.6
All purposes.	100.0

The borrowings under family expenditure were spent mostly for family consumption i, e. for food and clothings and thus they fall into the vicious circle of personal indebtness (see table 39).

Table 39

Purpose of loan under family expenditure group [52]

Purpose	Cases of borrowing in percentage.
Family consumption.	81.0
Residential construction or repair.	4.6
Social ceremony.	5.4
Litigation.	0.7
Medical expenditure.	5.1
Education.	2.3
Other family expenditure.	0.9
All purposes under family expenditure group.	100.0

This means that many farmers are to borrow to eat and so they can not create capital out of farm income or loan, for productive investment. The borrowings under 'capital expenditure' and 'current expenditure' on farming are utilised greatly for 'livestock purchase's and for 'hire of labour and equipment' respectively (see table 40).

Due to insufficiency of land for production of fodder crops, increasing number of small and uneconomic holdings and poor power of the farmers to avoid disinvestment of assets, number of their work animals has been decreasing. The Pakistan Census of agriculture 1960 reveals that as many as 21·4 lakhs (35%) of the farmers also do not possess any plough, the most important agricultural equipment of the farmers. They do not have any

Table 40

Purposes of loans under the groups of capital expediture and current expenditure on farm.

Capital expenditure		Current expenditure	
Purposes	Cases of borrowing in P.C.	Purposes	Cases of borrowing in P.C.
Purchase of land.	28.2	Purchase of seeds and manure.	19.9
Purchase of farm implement	5.6	Hire of labour and equipment.	49.1
Livestock purchase	62.3	Payment of rent.	28.9
Construction or fencing for farm.	1.4	Other current expenditure on farming.	2.1
Other expenditure on farming.	2.5		—
Total	100.0	Total	100.0

improved implements worth mention, not to speak of any modern agricultural machine.

The farmers are heavily in debt. Mr. H.S.M. Ishaque I.C.S. in his book 'ABC of Rural Reconstruction' writies as follows: "Half-fed, half clad, these rural folk have yet another crushing burden to carry. They are born in debt, brought up in debt and die in debt." According to the Pakistan Census of Agriculture 1960, the total amount of debt of the agricultural population has been estimated at Rs. 93 crores out of which Rs. 92 crores is the debt of the farmers and Rs. 1 crore is the debt of the livestock holders. In all 3015720 farm families and 53490 livestock holders, i, e., 48% of the total agriucultural families are in debt. The incidence is the heaviest (53%) in the class of medium size farmers. On average an indebted farm family has a debt of Rs. 305. If the indebted farm families are classified according to the size of debt, it will reveal that families having a debt of Rs. 100-200 represent the largest group (see table 41). About 17% of all livestock holdings are in debt and about 50% of all loans of the livestock holdings are below Rs. 100 in size and another 30% are of Rs. 100-250.

Table 41

Classification of indebted farm families according to size of debt, 1960.[53]

Size of debt Rs.	No. of farm families	Percent
1—99	8,71,230	29
100—249	11,43,920	38
250—499	5,60,210	19
500—999	3,15,550	10
1000—and above.	1,24,810	4

As the farmers' financial status is poor, they cannot usually ask commercial banks for loans. Therefore, loans to them are mostly made by private money lenders, relatives, friends and Govt. supported loan giving agencies including co-operative credit societies. Of the total loans to agricultural families, those from private individuals occupied about 90% and those from Govt.

agencies only 10% in 1960. This means that they are to borrow money from the private agencies at high rate of interest and on unsatisfactory terms and conditions.

Most farmers are so near the subsistance point and they are so much indebted that they cannot save for productive use. Due to evil of low capitalization, land becomes ever more scarce and hence ever more dear. Agricultural land now sells at from Rs. 1000 to Rs. 5000 per acre depending on soil fertility, operational facilities, distance from towns or bazars and some other socio-economic factors. The high price of farm land is in fact, an index of population pressure rather than of agricultural prosperity. "The great demand for land from people, most of whom have no alternative source of income, has driven up the price of fram land out of relation to its income earning capacity. In many parts of the country farming is a defeceit undertaking. Yet the value of land rules high, because the mass of the people must have some land if they are to subsist at all..... The high price of land absorbes a good proportion of the farmers' capital resources leaving a residue that is hardly sufficient for its improvement or efficient operation. Hence.....the farmer relies as much as possible on human labour and on poor catlle that costs him little to maintain, uses the simplest and the cheapest implements, draws as much as he can on the natural fertility of the soil and secures from his enterprise a yeild that keeps him and his land on the margin of subsistance."[54]

Use of labour and extent of employment

One may think that a 3-acre farm may be easily managed by a family consisting of six members without hired labour. In Japan sixty six percent of the total farm house—holds work on lands less than I hectare (2·47 acres) and their farming is carried on mostly by unpaid family labour.

But under the existing circumestances, 40·2 lakhs i. e. 62·2% of all agricultural families[55] of the province require hired labour,

8·4 lakh familes (13%) engage permanent hired labour and 31.8 lakh families (49%) use casual labour. The important factors which lead to this situation are as follows:

(*i*) Uneven distribution of farm operation---Important farm operations such as land preperation, sowing, weeding, harvesting etc. require to be done by certain time, when labour requirement becomes high, necessiating additional hired labour. February to April and November to December are generally peak work seasons for the farmers of the lowlying areas while June to August and December to January are the peak seasons for the high and medium land areas.

(*ii*) Absence of labour saving machines—Almost all farm operations are done by human labour and hence in absence of any power machine, per capita output of work can hardly be increased so as to meet the increased labour requirement in particular seasons.

(*iii*) Small number of working family members—An agricultural family consists of 6 members on overage. But the number of minors in a farm family is relatively big, the adult minor ratio being 3:2. The proportion of children in rural population of the province is very high in comparsison to other countries, which will be evident from the following particulars:—

Proportion of children under 10 years in the population of the selected countries.

England and Wales.	15%
U. S. A.	22%
East Pakistan	35%
East Pakistan (rural)	36%

On average each farm family has less than 3 working members and about half of this number consists of females who do little or no field work. They however do some pro-harvest and pre-sowing work at home. Though 74% of total adults in agricultural population 'are doing some work,' the percentage of the regular

workers is very small. If the females are excluded each family probably gets only one regular worker on average.

(*iv*) Dislike for manual works—There are many farmers who do not work in their own hand in their farms; rather for them, working in the field is considered beneath one's dignity. Most of these farmers have originated from a class of people who enjoyed in the past some kind of royal favour or who enjoyed in the past high social status in the village due to their wealth, education, leadership or some other distinction. Though with the passage of time, most of the descendents of these famlies have lost their previous wealth and social position, a good number of them still retain that lavish attitude. Unfortunately this undesirable attitude is spreading amongst the new families which have educated members and have taken up other profitable occupations and thus are rising in social ladder. These people generally own medium and large farms which require more hired labour than the small farms. But high consumption of hired labour in these farms is also due to the fact that owners of these farms and their family members do little manual work in their farms. The table 42 will indicate the extent to which farms of different sizes are using hired labour.

Table 42

Percentage of farms using permanent hired labour and casual labour, 1960

Size of farm	Permanent hired labour	Casual labour
Small	21	31
Medium	22	72
Big	70	93

(*v*) Availability of Cheap Agricultural labour—Agricultural labour has always been cheaper here than industrial labour. There is a good number of rural families who have no or little cultivated land and hence depend mostly on agricultural wages.

According to Pakistan Census of Agriculture 1960, about 22% of the rural people do not have any land for farming and a large portion of these people are agricultural wage earners. Besides, many farmers work outside their farms on wages basis as a subsidiary occupation. Poor mobility of rural people and lack of their skill in work other than agricultural, have further reduced the price of agricultural labour. This has also indirectly encouraged the dependency of the well-to-do families on hired labour. Generally consumption of hired labour increases with the increase of farms in size but farmers having suitable income from subsidiary occupations in cottage industry, trade, commerce and service, are also utilising considerable amount of hired labour in farms. In the total agricultual population of 388 lakhs,[56] there are 172 lakhs of working members which include 12 lakhs permanent hired labourers.[57] As a matter of fact, most of the farmers of the lower income group also work on wage basis cutside their farms, as a means of subsidiary income. In the past when labour cost was relatively cheap in the rural areas, farmers did not require to borrow much money for hired labour. Price of agricultural labour is now going up with the growth of industry in the province. And as a result, there are now many farmers who can hardly complete their farm operations particularly land preparation, weeding and harwesting, without borrowing nmoney.

It has been already pointed out that some farmers are trying to make additional income from subsidiary coccupations. But the extent to which such part-time occupation is taken up by the farmers dcpends on the availability of non-agricultural oppor tunity within a reasonable period and distance. As till now such scope is limited, part time work in non-agricultural occupation could not yet do much to increase farmer's income. Although the villages have supplied thousands of workers to cities, indus tries and Government departments they still have far more farmers than they need for efficient tillage.

If it is assumed that under the existing conditions of low capital investment, a farmer and his family can manage an average farm and share in other productive activities of the village, then a

withdrawal of abut one-fourth of the rural population from village would be required. This will not seriously reduce the total agricultural production, rather it will push up per capita produc tivity and income, to a great extent.

If it is possible to increase the size of the present holding to 5 acres on average, then agricultural population alone will require one-thrird reduction. A farm of 5 acres which was considered by the Land Ravenue Commission (1940) to be of the lowest economic size, may probably be managed by the family members with the help of a few better implements. To bring these farms to the U. S. A. standard in size as well as in machanisation, will mean elimination of 38.2 million people, i.e. more than 98% of the agricultural population even after alloting a farm to a family of six members in place of a U. S. A. family consisting of 3·5 members. These figures may seem to be paradoxical. However, it is a fact that the province has now more people in the farms than required and their number is frightfully increasing.

Agricultural population is increasing faster than either the supply or the productivity of land, resulting in increase of rural unemployment and underemployment. Out of 171·7 lakhs of working family members in the agricultural population, 95·8 lakhs (i.e. 56%,) work on farms alone, 52·5 lakhs (i. e. 30%) work on farms and do some other work and 23·4 lakhs (i. e. 14%) work off the farm in non-agricultural occupation. If the total adults (231·7 lakhs) available in the agricultural population are considered, it will be noticaed that 60 lakhs of adults are not working (see table 43). Those who are working are not also

Table 43

Number and percentage of adults in agricultural population, classified by nature of work, 1960.

Adults by nature of work	Number (in lakhs)	P. C.
1. Working on farms	95.8	41
2. Working on farm and doing other work.	52.5	23

3.	Working off the farm	23.4	10
4.	Not working	60.0	26
5.	Total Adults	231.7	100

engaged in full-time work. It is very difficult to measure the unemployment of farmers because of the absence of regularity in work and large importance of self-employment. Female actives of the farm families are predominently household workers and do little work in the field. They are, of course, found to do some of the pro-harvesting and pre-sowing operations which can be done at home. Farming here depends greatly on the male actives. However, "on the assumption that 250 man-days represent total annual potential labour supply per male active" the visible unemployment on farms amounts to 45% of potential supply of labour time. When the non-farm activities of the farmers are included, visible unemployment comes to 27%[58]. In finding out these figures, a day on which a farm active has worked for 2 to 8 hours, has been taken as a working day and hence unemployment figure will go up when it is calculated on the basis of 8 hours' working day. Some people think that an agricultural labourer here on average works for about 5 hours a day, and during this period he spends time for "smoking hukka, taking nasta' (food) and for some other purposes." Disguised unemployment, which refers to the excess of labour time actually spent over what is required on a peice of land and for a particular crop under the existing conditions so far technical know-how and capital equipments are concerned, is also a big problem. This is because farms are overcrowded and most of the farmers do not have sufficient productive work outside the farm. Many farmers are to remain idle at least for some periods of the year. An investigation conducted by the Dacca University Socio-Economic Survey Board reveals that 40% of the heads of the families having major part of their income from farming, suffer from unemployment for periods varying from 1 to 5 months. In some areas, proportion of farm families having unemployment for more than one month has even exceded 78%. The slackest period during which the percentage of farm families remaining unemployed reaches its peak is usually

confined to the rainy season particularly the months of September and October. In the low-lying areas where broadcast paddy is generally sown, the slack season starts earlier, from July, while the high land areas face a second peak which is comparatively lower and occurs in the months of March and April.

This huge wastage of human energy is a great national problem. This energy, if channelled in proper direction, may bring about wonders. Agricultural development cannot be acheived without investment of sufficient capital on farming. Capital is formed out of saving and propensity to save depends on the level of real income. Real income of the nation is low because of low prductivity. The rate of saving of the people has been estimated to be about 7·5 percent. Taking the total national income at Rs. 2000 crores, the total saving potential of the nation comes to Rs. 150 crores only and almost this whole amount is required to meet the increasing credit need of the agricultural sector of East Pakistan alone. This means that it is not possible to create agricultural capital, to any desirable extent, out of the existing saving. Import of capital from abroad on suitable terms is also difficult. Hence, capital must be procured from domestic sources and the province has great potential resource, that is, the manpower. It is in fact, not money but human energy which is real wealth. The huge manpower of the province can be profitably utilised for meeting capital requirement to a great extent. "Chronic underemployment or disguised unemployment which results in a tremendous waste of labour can be utilised as a source of capital formatin in this country. With 85 percent of the total population and only 60 percent share in the national income,the pressure on land in the agricultural sector can be well appreciated. This surplus labour can be easily taken off the land and set to work on capital projects like irrigation, drainage, roads, railways, houses, factories and so on. The situation at present is that unproductive surplus labourers on the land are sustained by the productive labourers. This means, the productive labourers are performing virtual savings i. e., they produce more than they consume. But unfortunately the saving runs to waste because it is consumed by those who produce nothing.

Now if these useless (in the purely economic sense) dependents like cousins, brothers etc., were sent away to work on capital projects and the productive workers continued feeding them, their virtual saving would become effective saving."

"As a rasult of this shifting of population from land to agricultural capital projects, the unproductive labourers will become productive and they will be paid remuneration for their services, from the increased saving of the productive farmers. And this may be done by means of imposing taxes on the farmers so as to avoid inflation and pay wages to the laboureres of the capital projects. What would actually happen is that the farmer will really continue feeding his dependents as before but with this difference that they will be producing in an economic system rather than remaining a burden on agriculture without producing any things[58A]. "However, shifting of population has many problems. But it is essential. And to boost up agricultural production, unproductive people should be diverted in increasing number, to the capital projects including industries. Growth of heavy industries will no doubt push some people out of rural areas and reduce rural unemployment. But the real solution for unemployment or underemployment of the agricultural population lies in extensive establishments of small scale and cottage industries in the rural areas of the province. This will provide work for the rural people within easy reach and will also reduce accommodation difficulties in the industrial cities. "The weastern system of centralised industrialism should never be an example, for it should never be forgotten that our country is absolutely agricultural."[59]

Diet and Health

The poor economic conditions of the farmers have left a very undesirable effect on their diet and health. Poor productivity and low income per capita usually force a farmer to spend an high proportion of his income for food, but he gets in return an inadequate diet.

In order to keep alive, he consumes most of what he has grown. Yet most of the farm people are undernonourshed or

malnourished. Mr. K.C. Lahiri, while describing rural condition in his book 'Rural Bengal—How to Revive' in the year 1938 when population pressure was not as acute as it is today, worte as follows:

"The villages of Bengal are in an awful state of misery, more awful than usually thought to be. The men who inhabit the villages have hardly sufficient food to maintain them throughout the year. Beyond the harvesting season most of them have nothing to eat and no subsidiary income to fall back upon. They somehow carry on in such off season, partly by starving' partly by begging and partly by borrowing." Mr. S.A. Quadir after conducting a detailed survey in a village of East Pakistan in the year 1960 writes, ".....people of Dhanishwar as a whole are in want for part of the year. At least for two months in a year usually just before the harvest, all families suffer more or less. About 90% of the families have to purchase rice at high price. Loans have to be contracted. Sweet patatoes and, to some extent, wheat are purchased to satisfy the hunger of the people[60]". A health bulletin issued by the Govt. of India in pre-Independence days reveals that "an insufficient and ill balanced diet giving only about 1750 calories per day is typical of diets consumed by millions in India (including Pakistan)," The deficiency in food supply in Indo-Pakistan was estimated before Independence as 22 p.c. in terms of calories, 38p.c. in terms of proteins and 64 p.c. in terms of fats. The condition has not yet improved much. According to Government sources, the present per capita calory intake in Pakistan is about 1850[61]. The figure for East Pakistan is smaller. And if the intake is taken to be in proportion to the income, the province will present a sad picture. The recent East Pakistan Nutrition Survey Report reveals that per capita nutrient (mean) intake in East Pakistan is about 2200 calories per day. Samples of people of 13 different locations were investigated to arrive at the estimate which appears to be on the high side. Yet, this intake is less by at least 400 calories than the minimum requirement and by about 900 calories than the optimum requirement of an adult. According to an estimate

made by the Food and Agricultural Organisation of UNO, for the year 1957-58, an average Pakistani consumes in a year 151 k.g. of cereals and 45 k.g. of proteins of which only 8 k.g. are of animal origin. This speaks of an unbalanced diet and indicates a low level of food consumption in comparisian to other countries (See table 44).

Table 44

Income and consumption of cereals and protein in selected countries 1957—58

Country	Income	Total annual consumption of cereals as food, feeds, seeds etc.	Cereals for human consumption.	Protein for human connumption.	
				animal	Total
	(U. S. $)	(k.g.)	(k.g.)	(k.g.)	(k.g.)
U.S.A.	2164	646	67	66	94
U.K.	960	413	85	51	87
Japan	250	218	157	15	67
Egypt.	112	235	188	13	79
Pakistan	77	173	151	8	45
India	60	144	124	6	47

The table 44 will reveal that though direct per capita consumption of cereals is comperatively big in Pakistan, total per capita consumption of creals is small here in comparison to many other countries. For example, when direct human consumption of cereals is taken into account, an average Pakistani consumes 225% of an American (U, S. A.) 213% of a Canadian, 178% of an Englishman and 137% of an Frenchman; but when total consumption of cereals is considered, an average Pakistani consumes only 27% of an American, 19% of a Canadian,

42% of an Englishman and 46% of a Franhman. This difference is due to the fact that major portion of the cereals consumed in the developed countries, is fed to the livestock for the production of dairy products, meat and egges.

But diet of an average East Pakistani is still poorer. Consumption of cereal food is not small but his diet is extremely poor in fats, protein and calcium contents. Of the total per capita intake of calories in this province,82% comes from carbohydrates, 11% from protein and 7% from fats. The mean intakes of carbohydrates, protein and fat among diffierent income groups, are 465 grams, 59 grams and 18 grams respectively (see table 48). The positions of minerals and vitamins are also very poor. The diet of the rural people is poorer and more unbalanced. Cereals and starchy roots constitute 70% of the total food consumed by an average rural person. Proportion of some important food groups is as followos :

Meat, fish and egg.	less than	5%
Milk and cheese		2%
Fats and oils	less than	1%

Of the total per capita consumption of 842 grams of food materials per day in the rural areas, cereals comprise 533·1 grams, starchy roots 55·5 grams, meats 5·8 grams milk and cheese 17·4 grams, and fats and oils 6·1 grams (see table 45)[61A]

Table 45

Per capita food consumption in rural areas of East Pakistan-1963[62]

Food groups	Avarage intake per day. (grams)	Variation of intakes according to different income groups (grams)		
Cereals	533·1	506·1	to	648·7
Starchy roots	55·5	46·9	to	67·3

Sugar and sweets	7·4	6·0	to	18·3
Pulses and nuts	29·1	23·4	to	79·5
Vegetables	137·5	126·3	to	174·5
Fruits	10·2	0·0	to	11·3
Meats	5·8	0·0	to	12·8
Eggs	1·9	0·7	to	4·7
Fish	33·0	23·4	to	58·2
Milk and cheese	17·4	9·5	to	58·0
Fats and oils	6·1	4·7	to	21·6
Misc (mixed spices)	4·7	...	...	...
Total	841·7	772·1	to	1074·8

Rice is the most important food item of the people. That the people of East Pakistan give much importance to rice as food may be evident from the fact that, while going to take lunch or dinner, they simply say, "Let us go to eat rice". Rice also enters into many socio-religious functions of the province. The family food budget of the people also comprises huge proportion of expenditure on cereals consisting mostly of rice. The table 46 will reveal that expenditure on cereal foods amounts to as much as about 70% and expenditure on all other food items amounts to only 30% of the total expenditure.

Table 46

Family expenditure on food materials[63]

Food items	Expenditure (in P.C.)
1. Cereals	69·39
2. Baked food	0·76
3. Fish and meat	6·94
4. Vegetables and fruits	4·79

5.	Edible oils and fats	2·98
6.	Pulses	2·54
7.	Milk and milk products	3·12
8.	Condiments and spices	3·75
9.	Gur and sugar	1.37
10.	Misc. food items (tea, sweets etc.)	0·29
11.	Pan, tobacco etc.	4·07

Importance of rice in the diet will also be evident from the fact that about 78% of the total calories are obtained from rice. And this is against 70% in Burma, 47% in Japan, 10% in Egypt and 0.3% in U.K. (See table 47).

Table : 47

Importance of rice in diets in some countries[64]

country	Year	Rice as % of	
		Total calories	Total cereals.
Burma	1947-48	70	96
Pakistan	1954-55 to 1956-57	48	66
(East Pakistan.....		78	97)
Ceylon	1954-56	47	78
Japan	1954-56	47	70
India	1954-55 to 1956-57	34	52
Egypt	1954-55 and 1955-56	10	14
Italy	1954 55 to 1956-57	2	4
Turkey	,, ,, ,,	1	2
U.S.A.	1964-1956	0·8	3·5
U.K.	1954-55 to 1956-57	0·3	1·3
Germany	,, ,, ,,	0·5	1·6

Table : 48

Nutrient intake by different income groups of people of East Pakistan, 1963

	Overall mean	Variation of intake according to income groups		
Calories	2218	1449	to	3170
Protein (grams)	58·75	52·12	to	7690
Fat (grams)	17·89	14·05	to	27·49
Carbohydrate (gram)	465	424	to	659
Minerals :				
Calcium (mg)	329	291	to	548
Iron (mg)	10·34	8·85	to	15·60
Vitamins :				
vit.A. (I. U.)	1585	1408	to	2191
Thiamine (mg)	1·46	1·33	to	2·06
Riboflavin (mg)	0·50	0·44	to	0·76
Niacine (mg)	21·40	19·90	to	2760
Vit. C (mg)	39·90	28·20	to	55·20

The diet of the people of the province suffers from serious qualitative dificiencies. According to Dr. Baljit Singh, average consumption of cereals by a person of the Indo-Pakistan sub-continent in 1947 was 105·7 p.c. of the actual requirement[65]. Some specialilists consider that rice is a principal culprit in the dietary situation and that the level of health in rice-eating areas is probably lower than in wheat eating areas. Rice loses more of its natural elements between field and table than do other staple cereals. Milling and polishing reduce its food value to a considerable extent. The processes which involve washing and cooking before consumption, lead to serious depletion of nutrients. An investigation conducted in some parts of India showed the following losses from rice due to washing and cooking :

	Loss in p. c.
Iron	75
Calcium and phosphate	56
Protein	10
Calories	15
Thiamine	85

Parboiled rice however, contains more nutrients than raw milled rice. Improved practices may retain most of the nutrients lost in milling, storeing, washing and cooking of rice.

The large proportion of rice in the diet of the people particulary in the rural areas also gives rise to other difficulties. As rice swells in cooking to about 5 times its dried bulk, the consumer is forced to eat large quantities of it. This causes the digestibility and protein absorptions to fall, some times by as much as 50% This may also diminish the absorption of elements from other food not themselves bulky[66]. The preponderance of rice in the diet is mainly due to the unavailability of other foods in sufficient quantity. The diet of the people, therefore, suffer from serious qualitative defeciencies. People donot have proper knowledge of nutrition and this has also worsened the situation to a consi derable extent. "Recent field observations in East Pakistan suggest the possibility of improving local diet materially, on the basis of food already at hand, through relatively minor changes in eating habits"[67]. Similar view was held by another scholar who said, "the protein and other deficiencies can not be easily overcome by creating overninght a thriving beef cattle and dairy industry; but they can perhaps be overcome by improved processing, distribution, and preparation of the foods available, togather with the addition of strategic food elements of small bulk but major dietary importance, some of them possibly synthetic[68]".

However, it seems that lack of calories, vitamins, and essential nutrients is the greatest single source of death in the province. It produces dietary diseases such as beriberi, diarrhea, cirrhosis of liver, blindness, dropsy, stomatitis, glossitis , cheilosis, oedema, scurvey, kwashiorkar etc. But the mortality from all of these

disorders, great as it undoubtedly is, does not represent the main contribution that food deficiency makes to the total mortality. The indirect cost, mainly in the form of lowered resistance to diseases of infectious origin, such as tuberculosis, infuenza, pneumonia, leprosy, etc. and also in the form of inefficiency in food production, is much greater. It has lessened the strength, incentive, and effective intelligence which are necessary if the people are to remedy their situation. Low level of living has made the people victim of many other diseases of which malarial fever is most important. In the early thirties, Mr. N.K. Ghosh described the ill-effect of malaria as follows :

"Every year about 12 lakhs of people die of malarial fever alone in Bengal. This means that malarial fever is killing about 2 persons per minute on average. And those who suffer and then servive lose their working capcity to a great extent. The numbe of people who servive, is greater than the number of those who die. Farm people comprise more than 75% of these people. At a very conservative rate, 2 farmers or 2 of their family members are dying each minute due to malarial fever. This is one of the greatest reasons of agricultural backwardness in the province." Though now-a-days 'virulence of epidemics has decreased considerably due to preventive measures and invention of useful drugs', at least 50,000 persons die and by far a greater number lose working capacity every year in this province owing to malarial fever. Besides, 'one out of every twelve persons' is suspected to be suffering from tuberculosis which can very rarely be overcome by the affected persons. Death due to typhoid, cholera, dysentry etc. is also great. "In fact we witness all around us a grim tragedy in which the principal actors are cholera, small-pox, malaria and other endemic diseases upon a stage over which the curtain never falls"[69]. In the province, lands are prepared with the help of weak and inefficient bullocks which are as under-nourished and emaciated as the man behind the plough.

The reproductive behavior of the province shows a great wastefullness. In 1931, the net reproduction rate in Bengal

was as low as 43% of the gross rate, whereas in U.S.A. it was about 90%. This means that a high percentage of the childern born to the people die before reaching adult stage. And as a result a tremendus amount of biological and social energy is lost. In other words, it results in great deterioration of the farmers' physical, mental and economic resources.

Social Status

In the present social structure, a farmer does not get due place and respect. This situation was mainly given rise to by the permanent zamindery system which created some classes in the society and the real tillers of lands were gradually thrown into a low class in that society. Manual labour lost its dignity and the profession of cultufation was looked down upon. Mr.N.M. Khan I.C.S, the then Director of Agriculture, Bengal, while delivering a speach on postwar agricultural development at the meeting of the Royal Asiatic Society of Bengal in 1945 said, "I can not help pointing out that in Bengal the actual profession of cultivation is not looked upon with respect. A'chasa'(cultivator) is a 'chasa' and cannot be a 'bhadrolok' (gentleman) without giving up the work of tilling the land with his own hands. Rent-receivers are respectable people. So are zaminders but not the man who carries the burden of the whole social fabric. Manual labour is considered a disgraceful thing. We must bring about a change in this mentality. I often hear talks of dearth of agricultural labour in Bengal. How can we talk of over-population when we cannot find even the small number of labourers required to work our single-crop economy? I have come across vast areas of cultivable land lying fallow in northern Bengal. It is well khown that the people of Dinajpur wait for people from the U.P. and Bihar to come in and harvest their crops. I am certain in my mind that the rich soil of Bengal can support the existing population if it were properly and fully utilised. I am not arguing aganist industrial devolopment. Let us have industrial development on a vast scale, but we shall not be suceessful unless our people really come to beleive in the dignity of manual labour. We are

not at present taking full use of our manpower. We can work mircles with the numbers we have got. No stigma should be allowed to attach to any type of manual labour, least of all to agricultural labour. It is for the so called higher classes to give a lead in this matter to the masses. We can not wash away the stigma by merely talking about it. We have to set practical examples.....

Agriculture on a small scale can never pay if the cultivator and his family do not find sufficient occupation on their lands throughout the year. I am certain that there is a bright future ahead of Bengal provided her children can revive the old traditional respect for the profession of cultivation."

In the previous pages, we have come across some facts which speak of the unsatisfactory conditions of the farmers and their farms. But does it mean that the farms are unproductive and the farmers are inefficient or worthless? No. East Pakistan is one of the richest tracts of land and the farmers are one of the most intelligent peoples in the world. They are very hard working. They are to fight for survival against hundreds of natural calamities of wihch floods and cyclones cause severe disasters to their crops, property and life. They grow paddy on lands which go under water about 20 ft deep and also on hill slopes which are too steep for work of animal-drawn implements. They grow jute, harvest it very often from under deep water and perform many other difficult processes such as retting, stripping, etc. for the production of the nation's 'golden fiber'. They are producing more than one crop on about 48% of their lands and they are doing this almost without any power machine.

They did not get opportunity to move forward in respect of modern farming and their backwardness was mainly due to to the fact that the British regime of two hundred years was a period of awful neglect for them.

The political and economic programmes made for the province did not give the farmers due importance. "The population of the Punjab is roughly one half of the population of Bengal, but that province had been spending Rs. 40 lakhs a year on agriculture up to 1939 while we were spending only Rs. 9 lakhs."[70] Farmers here were left ignorant of the improved machine techniques. There was no seed farm, no fertilizer factory, no insecticide factory, no irrigation facility and no improved machine for the farmers. And the British tariff policy gradually ruined their cottage industries and thus deprived them of the subsidiary incomes. After Independence, the provence has however been advancing with a new out look. But yet only 16.4% of the rural population are literate, 0.6% of the total actives work in industries,[71] 4% of the farmers use chemical fertilizers, 7% of the cultuvated land is irrigated and less than 1% of the cultivated area is sown with improved seeds while mechanised farming is negligible and farmers' association is almost absent. The province is at the very initial stage of improved farming and vast socio-economic fields related to agriculture are still awaiting basic improvememnt. Farming is a complex occupation and suceessful farming depends on many socio-economic factors. And so, when the fundamental requirements of profitable farming will be met and the ill-effects of the past removed, the rich soils and the intelligent farmers of East Pakistan will surely be able to produce sufficient crops not only to satisfy the internal demand of the province but also to export. There are many agricultural specialists and economists who think that if the agricultural people are properly mobilised and the available resources are scientifically exploited, it will not be a difficult task to re-convert this region into what the Emperor Aurangzeb called "the Paradise of Nations" in the eighteenth century.

NOTES AND REFERENCES

[12]The Cambridge History of India, Cambridge University Press 1922.

[13]Forest area which are owned and controlled by Government have been excluded.

[14]Chlttagong Division includes most of the hilly areas and so has relatively poor amount of cultivated area.

[15]The area of East Pakistan as recorded in the Population Census of Pakistan 1961 is 55.21 thousand sq. miles.

[16]S. A. Qader, Village Dhanishwar—Three generations of man-land adjustment in an East Pakistan village (1960).

[17]It has been assumed that each person appearing in the Record of Rights of 1894 represented a family.

[18]Famine Inquiry Commission's Report.

[19]N. K. Ghosh, Krishi-Sampad Vol: XXI. No. XI. and XII 1931.

[20]Tables 20 & 21 have been prepared on the basis of Dacca University—Socio-economic Survey Board, Rural credit and Unemployment in East Pakistan, 1956.

[21]89 cities of the subcontinents were considered for compiling this figure.

[22]Dacca University—Socio-economic Survey Bords' Report 1956.

[23]Compiled from the report of the Dacca University Socio-economic Survey Board 1956.

[24]Census of India 1931.

[25]Kingsley Davis, Population of India and Pakistan.

[26]P. A. Wadia and K.T. Merchant, Our Economic Problem, Bombay, 1946.

[27]Kingsley Davis, Population of India and Pakistan.

[28]Finance Department, Government of East Pakistan—Economic Survey of East Pakistan 1961—62.

[29]These figures relate to those industries which have reported to Census of Manufacturing Industries only.

[30]O.E. Baker—The Outlook for Rural Youth, Washingteen D.C. 1935.

[31]E.D. Tetreau—The Location of Heirs and the Value of their Farm Inheritances; Farm and City values, 1940.

[32]Shiva Rao, labour in India 1944.

[33]B. Shiva Rao—Labour in India. 1944.

[34]Royal Commission on labour in India, 1931.

[35]These estimates except the last one were calculated for the whole of Bengal. It is not known to this author wheather these estimates were arrived at on a common basis of survey and defination. However, estimates for size of holding obtained by the Pakistan of Census Agricultural in 1960, was confined to the farmers only.

[36]Compiled from the Dacca University Socio-Economic Survey report, 1956.

[37]Pakistan Census of Agriculture 1960. The figures do not include urban areas.

[38]S. A. Quadir, Village Dhanishwar—There Generations of man-land adjustment in an East Pakistan Village

[39]ibid.

[40]ibid.

[41]Finance Department, Govt. of East Pakistan—Economic Survey of East Pakistan, 1961-62.

[42]Finance Department, Govt. of East Pakistan—Economic Survey of East Pakistan, 1962-63.

[43]D. Ghosh, Pressure of Population and Economic Efficiency in India-1946.

[44]Central Statical Office, Ministry of Economic Affairs, Government of Pakistan.

[45]Ibid.

[46]J. C. Jack—Economic life of a Bengal district.

[47]Lower limit of the 'Ist level' expenditure and upper limit of the 'fourth level' expenditure have been given here. 'The second' level expenditure may be seperated from the 'third level' expenditure by the lower limit of the 'second level' as follows :- Food and toilet 79.1%, Clothing 14.1%, Housing 1.7%, Farniture and utensils 5.1%,
This table has been prepared on the basis of the measurement of the level of living used by the Dacca University Secio-Economic Survey Board 1956

[48]Agriculture in Japan-Japan F A O Association, 1958. The relevent figures relate to the year 1956.

[49]Compiled from the report of the Dacca University Socio-Economic Survey 1956.

[50]Dacca University Socio-economic Survey Board, 1956.

[51]Ibid.

[52]Ibid.

[53]Pakistan Census of Agriculture, 1960.

[54]D. Ghosh, Pressure of Population and Economic Efficiency in India, 1946. New Delhi.

[55]Agricultural families include 61.4 lakh farm households and 3-2 lakh livestock holdings.

[56]This does not include members of those families which live entirely on agricultural wages.

[57]Total working members comprise both male and female workers.

[58]Dacca University Socio-economic Survey Board's Report 1956.

[58A]Mr. Z.H. Chaudhri, Capital Formation in the Agricultural Sector. The Agricultural Economist, 1959.

[59]Rural Bengal-How to Revive, Kiron Ch. Lahiri—1938.

[60]S. A. Quadir—Village Dhanishwar—Three generations of man-land adjustment in an East Pakistan village (published by Pakistan Academy for Rural Development, Comilla).

[61]Drafter chapter on Agriculture, Third 5-year Plan, Govt. of Pakistan.

[61A]Vide the East Pakistan Nutrition Survey Report. The survey was carried out jointly under the auspices of Government of Pakistan, the Interdepartmental Committee on Nutrition for National Defence (U.S.A.) and the University of Dacca.

[62]Population surveyed has been classified into 6 groups on the basis of monthly income (cash and kind); Viz : Rs. 0-99, Rs. 100—199, Rs. 200—299, Rs. 300—399, Rs. 400—499 and Rs. 500 and above.

[63]Source—Central Statistical Office. The estimate was based on monthly expenditure.

[64]FAO.—The World Rice Economy (Vol. II), 1963.

[65]Baljit Singh—Population and Food in India 1947.

[66]W. R. Aykroyd—Malnutrition and Rice Problem.

[67]Dr. Isabel Kelly—Improved Diet for East Pakistan 1961.

[68]Kingsley Davis—Population of India and Pakistan.

[69]Mr. S. G Kabir, Pakistan Agriculture. F.A.C.P.

[70]Mr. N. M. Khan, Post-war Agricultural Development in Bengal, 1945.

[71]Based on Census of Manufacturing Industries, 1961–62.