

BRIEF DESCRIPTION OF ASSAM AGRICULTURAL COMPETITIVENESS PROJECT (AACP)

Agriculture Department

Project activities would be grouped into three components : **(i) Investment Grant Scheme** : to address the constraint of lack of capital in farm and rural communities for productivity enhancing investments; **(ii) Agriculture Services and Market Chain Development** : to address the constraints of inadequate market-linked technology transfer; absence of basis producer organizations with links to markets, and **(iii) Infrastructure Development** : to address the inadequate market infrastructure.

(i) Investment Grant Scheme : Training poorer sanctions of farming and rural communities, this component would promote income generating farm investments by small farmer groups in irrigation, mechanization and community investments in micro-watershed.

- Irrigation development would involve formation of 60,000 irrigation groups of 3-5 farmers acquiring STWs to irrigate 132,000 hectares (ha); 20,000 groups developing low lift pump schemes irrigating 44,000 ha; and pilot operations in sprinkler irrigation.
- Farm mechanization activities would foster formation of 750 Agro Service Groups (ASG) made up of 10-20 small farmers acquiring tractors and another 1500 ASGs acquiring power tillers for own use and provision of contract farming services;
- Micro-watershed drainage activities would assist flood plain communities restore natural drainage lines and reduce annual water logging and crop loss on 20,000 ha, involving an estimated 15,000 farm families.

Following agreed cost-sharing formulae, matching grants for development costs would be given to supplement beneficiary contributions. For irrigation and farm mechanization investments, grants would be made in association with a commercial bank loans. Financing of irrigation and mechanization would follow an agreed formula : equity 20% commercial bank loan 50%, matching grant 30%. In Micro water shed Drainage, the government will contribute 70% of the cost with the balance 30% coming from field Management Committee in the form of cash of labour or a combination of both.

(ii) Agriculture Services and Market Chain Development : This component would promote decentralized, pluralistic research and extension systems, upgrade the productive capacity of livestock and fish-cock and strengthen farmers market knowledge and linkage involving :

- Introduction of the Agriculture Technology Management Agency (ATMA) concept to revitalize the extension system, devolving public extension funding and management down to district level, activity promoting increased farmer involvement in planning and implementation of programs, promoting collaboration between line Departments, linking extension more closely to market requirements and encouraging and facilitating partnership with private service provides.
- Making agriculture research more farmer oriented in planning and implementation with appropriate focus on natural resource management and biodiversity issues:

This project would finance selected rehabilitation and equipping of offices vehicles/TE/Hiring of Vehicles to increase field mobility; NGOs to assist in community mobilization and sustainability; field experiments and demonstrations' field days and farmer exposure visits; farmer interest and self-help groups; a pilot enterprise development fund selected studies and market surveys and implementing agency operating costs.

(iii) Infrastructure Development : Upgrading of 24 rural primary wholesale markets and 50 local retail markets (known locally as haats)

PROJECT COST OF THE AGRICULTURE DEPARTMENT UNDER ASSAM AGRICULTURE COMPETITIVENESS PROJECT

Base Cost (in Lakh)

Table	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Irrigation	47.92	1621.34	4300.34	5255.69	4386.74	2114.62	17726.65
Mechanization		640.00	1280.00	1280.00	1280.00	320.00	4800.00
Agriculture Extension Services	273.07	1156.44	1353.23	1437.25	855.45	763.75	5839.19
Market Development		925.00	1353.23	1437.25	855.45	763.75	5839.19
Marketing Extension	3.30	94.75	32.35	57.65	47.40	17.40	252.85
Total	324.29	3839.53	7890.92	9035.59	6569.59	3215.77	30875.69

**IRRIGATION & MECHANIZATION COMPONENT
IRRIGATION PROGRAMME IN ASSAM AGRICULTURAL COMPETITIVENESS PROJECT (AACP)**

INTRODUCTION

Irrigation development would focus on expanding dry season cultivation. Leading to increased intensification and diversification of production systems, by promoting small scale irrigation systems using both ground and surface water resources and pilot testing new irrigation technologies. The Small size of the irrigation will create the ownership of small groups. The small group

Sub Component : The following sub components will be addressed under irrigation component

1. **Shallow Tube-Well (STW)**
2. **Low Lift Pump (LLP)**
3. **Land Development**
4. **Sprinkler Irrigation**
5. **Flow Irrigation**

- Increasing area under Rabi crop is viable alternative as cultivation of Sali and Ahu crops and risky because of uncertain monsoon and difficulty in harvesting. With the installation of Shallow Tube Well (STWs), farmers will be able to grow crop in Rabi. *Groups of three or four farmers will be assisted to form and acquire a **Shallow tubewell (STW)**. About 60,000 groups are expected to participant, creating irrigation facilities for an additional 132,000 ha.*

- In certain areas of the state where STW is not feasible. **Low Lift Pump (LLP)** has been projected for introduction as an alternative in this scheme. From the Hydro-geomorphological Reports prepared by Assam Remote Sensing Application Centre. It is evident that the aquifers are scarce in Barak Valley Zone. Hill zone particularly N.C. Hills district and a small part of Sibsagar, Jorhat, Golaghat, Morigaon, Kamrup, Goalpara, Darrang and Sonitpur districts. In these areas where adequate surface water are available, LLP will be taken up. It will be a low cost alternative groups of three or four farmers assisted to develop micro low lift pump (LLP) schemes in areas where groundwater availability is problematic, but where suitable surface water bodies are available. About 20,000 groups are expected to participate, creating about 44,000 ha of newly irrigated land and

- In some areas of the state, there is very little opportunity to use ground water due to non-availability of unconfined aquifer layer. Project intervention in these areas through **flow irrigations** will help the farmers to increase the cropping intensity and thereby enhance their net income. Four numbers of pilot projects having up to 50 ha. of land will be taken up for flow irrigation project where STW is not feasible particularly in Barak Valley and in certain area of Upper Brahmaputra Valley & Northern Brahmaputra Bank plan zone. Total area of the land under this scheme will be 200 ha. Piloting micro flow irrigation schemes in upland areas where groundwater is not available, but it is possible to divert flows from streams; and **sprinkler irrigation** in sandy areas associated with STW of LLP schemes. In many areas sandy loam soils permits high infiltration which results in loss of irrigation water. In high value crops in areas dominated by sandy loam soils, sprinkler irrigation will be effective in preventing these losses and thereby the operating costs. The scheme will be implemented in the areas which will be identified appropriate to Sprinkler irrigation with respect to existing cropping pattern as well as soil characteristic. About 200 hectare of the land will be taken up in the pilot project. The component will be used in the high value crops and in crops which do not require flooded water.
- **Micro-watershed drainage** would address the problem of drainage congestion, primarily due to siltation and growth of vegetation in the existing natural drains. Drainage of approximately 20,000 Ha farm land is expected to be improved under the project. Drainage sub-basins would be identified where there is a strong demand from local communities. Work would involve removal of vegetation and silt from existing collector and main drains' re-sectioning of drains where necessary' and repair rehabilitation of culverts. All works will be carried out within the right of way of the existing drains, and not involved any land acquisition. Active participation of the relevant Field Management Committees (FMCs) in the planning, design and implementation stages will be ensured. Use of LLP in the dry season for irrigation about 10% of the command area for winter crops and vegetables will enhance the economic viability of such drainage improvement activity. Therefore, a combination of drainage improvement with provision of selected of LLPs along the development stretch of the drainage channel will be undertaken. The environment effect will be taken into consideration and the NGO/SHG will be involved for group formation, coordination and guidance. The district and blocks will be selected on the basis of the following criteria –
 - ◆ Percentage of waterlogged & marshy area out of total geographical area.
 - ◆ Percentage of waterlogged area out of total net cropped area.
 - ◆ Percentage of waterlogged area out of total cultivable water land area.
 - ◆ Percentage land development cost of marshy land.
 - ◆ Areas where shallow tube well irrigation is not feasible.
 - ◆ Where farmer willing to participate in land development activities.
 - ◆ Percentage of small and marginal farmers in the district.
 - ◆ Percentage of SC/ST farmers in the district.

FINANCING

- **Financing of irrigation development would follow an agreed formula: equity 15-20%, commercial bank loan 50-55%; matching grant 30%.** Agreement has been reached with the **State Bank of India** to finance this scheme and an appropriate MOU (Memorandum of Understanding) established between the bank and the Project Coordination Unit (PCU) AACP, setting out the loan application procedure, participants eligibility criteria, broad terms and conditions of loans, and borrowers contribution requirements. Farmers will approach **State Bank of India** for loans and the government grant portion will be back-loaded through SBI. The project will facilitate loan disbursement by providing a list of beneficiaries and making a commitment to SBI on payment of the grant.
- In the Micro-watershed Drainage, the Government will contribute 70% of the cost, with the balance 30% coming from FMCs in the form of cash or labour, or a combination.

PROCUREMENT

Groups will procure their pump-sets directly from local dealers who would be paid directly by SBI. To encourage competitive pricing and quality assurance, quotations from reputed pump-set manufacturers will be sought, based on approved technical specifications and agreement reached with them on the rates at which the pump-sets will be sold to project participation groups. This will allow farmers to buy pump sets at rates cheaper than the market rates, without sacrificing the quality; but at the same time, have the benefit of selecting models according to individual preferences.

OWNERSHIP PATTERN

Type of Irrigation	Ownership
Land Development	A group of 4-5 farmers.
Sprinkler Irrigation	A group of 3-4 farmers.
Flow Irrigation	Three groups of farmers in the upper, middle and lower reach. Each group will consist of not more than 20 farmers. Water will be utilized in a roaster system.
Low Lift Pump	A group of 3-4 farmers per unit.
Shallow Tube Well	A Group of 3-5 farmers.

IRRIGATION PROGRAMME DURING 2004-05

During the year 2004-05 (Upto March, 2005) the emphasis will be mainly on ground water irrigation through installation of 5000 STW in the whole state. Through a tentative allotment has been made (Enclosed) for the distribution of these 5000 STWs. It will be subject to modification on the basis of demand at the field level.

Table :1 **Districts wise tentative allotment of STWs for the year 2004-05 (Mar, 2005)**

Zone / JDAs	District	Target in Nos.
Upper Brahmaputra valley zone. (JDA Tinsukia & Jorhat)	Tinsukia	50
	Dibrugarh	100
	Sibsagar	100
	Jorhat	100
	Golaghat	150

Central Brahmaputra Valley Zone (JDA, Nagaon)	Nagaon	450
	Morigaon	100
Lower Brahmaputra Valley Zone (JDA, Barpeta, JDA, Goalpara, JDA, Dhubri)	Kamrup	600
	Goalpara	200
	Nalbari	450
	Barpeta	500
	Bongaigaon	150
	Kokrajhar	150
	Dhubri	600
North Bank Plain Zone (JDA, Dhemaji, JDA, Tezpur)	Darrang	400
	Sonitpur	200
	Lakhimpur	200
	Dhemaji	100
N.C. Hills Zone (JDA, Diphu)	Karbi Anglong	100
		5000

Application No.

PART-I
APPLICATION FORM
STW/ LLP/ TRACTOR /POWER TILLER/ SPRINKLER
UNDER AAC PROJECT

To

The Executive Engineer, Agriculture
The Assistant Executive Engineer, Agriculture

Sub : Application for

Sir,

I/We hereby apply for No./Nos. of Tractor / Power Tiller / Shallow tube Well / Low Lift Pump / Sprinkler Set for out agriculture use and furnished below the necessary information of your information and necessary action.

With regards.

Yours truly,

Signature of the authorised person
(with Seal and date)

PARTICULARS TO BE ENCLOSED :

- 1. Name of the Group (SHG/Sub-Group of FMC/FIG) :
 - Name of the Location :
 - District :
 - Civil Sub-Division :
 - P.O. & Village :
 - Nos. of Group members :
 - Total Agriculture land of the Group :
 - Nos. of STW/Tractor/Power Tiller already existed :
In the FMC :
- 2. If any member of the group defaulter of pervious loan? :
- 3. a. Willingness of the group members to contribute farmer's share. :
 - b. Feasibility of STW : Yes / No.
- 4. Land holding pattern (in %) for S.F. and M.F. :
- 5. Lack of Irrigation facilities in the FMC (in%) :
- 6. Presence of weaker section in Group (in%) : SC ST
- 7. Involvement of women in the Group (%) :
- 8. Use of fertilizer existing operation in FMC (in%) :
- 9. Amount of Bank Account :
- 10. Present Cropping Intensity :
- 11. Reliability of source of water : Perennial / Seasonal
- 12. Status of Top Soil : Sandy Loam / Loam / Clay

Verified & found correct

Countersigned

Accepted

Signature of concerned FMC
Table 12

Signature of ADO

..... Engineer, Agriculture

PROCEDURE OF SOCRING FOR STW

1. Name of the Group (SHG / Sub Group of FMC / FIG) :
2. Numbers of group members :
3. Total land owned by the group :
4. New Cultivable area of the Group :
5. Number of STW already existed within FMC :
6. Numbers of STW applied for within FMC :

Sl. No.	Item / Subject	Range	Score	Remarks
1.	Feasibility of STW	Feasible	Yes	No further processing is necessary if the answer is "No" for the Serial number 1 or 2
		Not feasible	No	
2.	Willingness of the Group members to contribute of any previous loan?	Willing	Yes	
		Not Willing	No	
3.	Is any member of the Group is defaulter of any previous loan?	No	5	
		Yes	0	
4.	Land holding pattern in the FMC	More than 75% small & marginal farmers	10	
		50 – 75%		
		<50%		
5.	Lack of Irrigation facilities within the FMC	Less than 30%	10	
		30 – 50%	5	
		50% - and above	3	
6.	Presence of weaker section (SC/ST)	More than 75%	10	
		50 – 75%	5	
		Less than 50%	3	
7.	Involvement of woman in the Group	More than 15%	10	
		10% - 15%	7	
		5% - 10%	3	
		Less than 5%	0	
8.	Use of fertilizers in existing operations (in FMC)	More than 50% of the recommended doses	5	
		Less than 50% of the recommended doses	3	

প্ৰথম খণ্ড
আবেদন প্ৰ-পত্ৰ
‘আছাম এগ্ৰিকালছাৰেল কম্পিটিটিভনেছ প্ৰজেক্ট’
(ASSAM AGRICULTURE COMPETITIVENESS PROJECT)

প্ৰতি :

প্ৰসঙ্গ / বিষয় : অগভীৰ নলীনাৰ বাবে আবেদন।

মহাশয়,

মই আমি ইয়াৰ দ্বাৰা টা অগভীৰ নলীনাৰ আমাৰ কৃষি ক্ষেত্ৰত ব্যৱহাৰৰ কাৰণে আবেদন জনালোঁ আৰু আপোনাৰ জ্ঞাতাৰ্থে আৰু বিবেচনাৰ্থে নিম্নলিখিত তথ্যসমূহ উল্লেখ কৰিলোঁ।

আপোনাৰ বিশ্বাসী

স্বাক্ষৰ : কৰ্তৃত্বশীল ব্যক্তি
(তাৰিখ আৰু মোহৰ সহ)

সম্বন্ধিত কৰিবলগীয়া তথ্যসমূহ :

- | | |
|--|------------------------|
| (১) গোটৰ নাম (আত্মসহায়ক গোট /উপগোট, পঃ পঃ সঃ /স্থান | : |
| জিলা | : |
| মহকুমা | : |
| ডাকঘৰ আৰু গাওঁ | : |
| গোটৰ মুঠ সদস্য সংখ্যা | : |
| গোটৰ মুঠ কৃষি ভূমি | : |
| পূৰ্বে সংস্থাপিত অগভীৰ নলীনাৰ সংখ্যা | : |
| (২) গোটৰ কোনো সদস্য পূৰ্বৰ ঋণযুক্ত নে? | : |
| (৩) (ক) খেতিয়কৰ অংশ মূল্য দিবলৈ গোটৰ সদস্য ইচ্ছুক নে? | : |
| (খ) অগভীৰ নলীনাৰ কাৰণে উপযোগী নে? | : |
| (৪) ক্ষুদ্ৰ আৰু উপান্ত খেতিয়কৰ মাটিৰ পৰিমাণ (শতাংশত) | : |
| (৫) পথাৰ পৰিচালনা সমিতিত জলসিঞ্চনৰ ব্যৱস্থা নথকাৰ অংশ (শতাংশত) | : |
| (৬) গোটৰ অৱহেলিত / দুৰ্বল শ্ৰেণীৰ প্ৰতিনিধিত্ব (শতাংশত) | : অনুসূচীত জাতি |
| | অনুসূচীত জনজাতি |
| (৭) গোটত মহিলা সদস্য জড়িত (শতাংশত) | : |
| (৮) পথাৰ পৰিচালনা সমিতিত বৰ্তমান কৃষিকৰ্মত সাৰৰ ব্যৱহাৰ (শতাংশত) | : |
| (৯) বেংকত থকা জমা ধনৰ পৰিমাণ | : |
| (১০) বৰ্তমানৰ শস্য নিবিড়তা (cropping intensity) | : |
| (১১) পানীৰ উৎসৰ বিশ্বাসযোগ্যতা | : বছৰজোৰা / খেতিৰ বতৰত |

(১২) ভূ-পৃষ্ঠৰ সংজ্ঞা

ঃ বালিচহীয়া / টান / বোকা

সকলোবিলাক জালিজাৰি চাই শুদ্ধ পোৱা গ'ল

অগভীৰ নলীনাদ পোৱাৰ বাবে
অনুমোদন কৰা হ'ল / গ্ৰহণ কৰা
হ'ল

অগভীৰ নলীনাদ মঞ্জুৰ কৰাৰ কাৰণে বিবেচনা কৰিব পাৰে /
অগভীৰ নলীনাদ প্ৰদান কৰাৰ কাৰণে বিবেচনা যোগ্য নহয়।

আবেদনকাৰী অগভীৰ নলীনাদ
প্ৰদানৰ যোগ্য নহয়, সেয়েহে নাকচ
কৰা হ'ল।

স্বাক্ষৰ :

স্বাক্ষৰ :

স্বাক্ষৰ :

সভাপতি / সম্পাদক, পঃ পঃ সঃ

কৃষি উন্নয়ন বিষয়া

অভিযন্তা (কৃষি)

গাওঁ পৰ্যায়ৰ কৃষি সম্প্ৰসাৰণ কৰ্মী

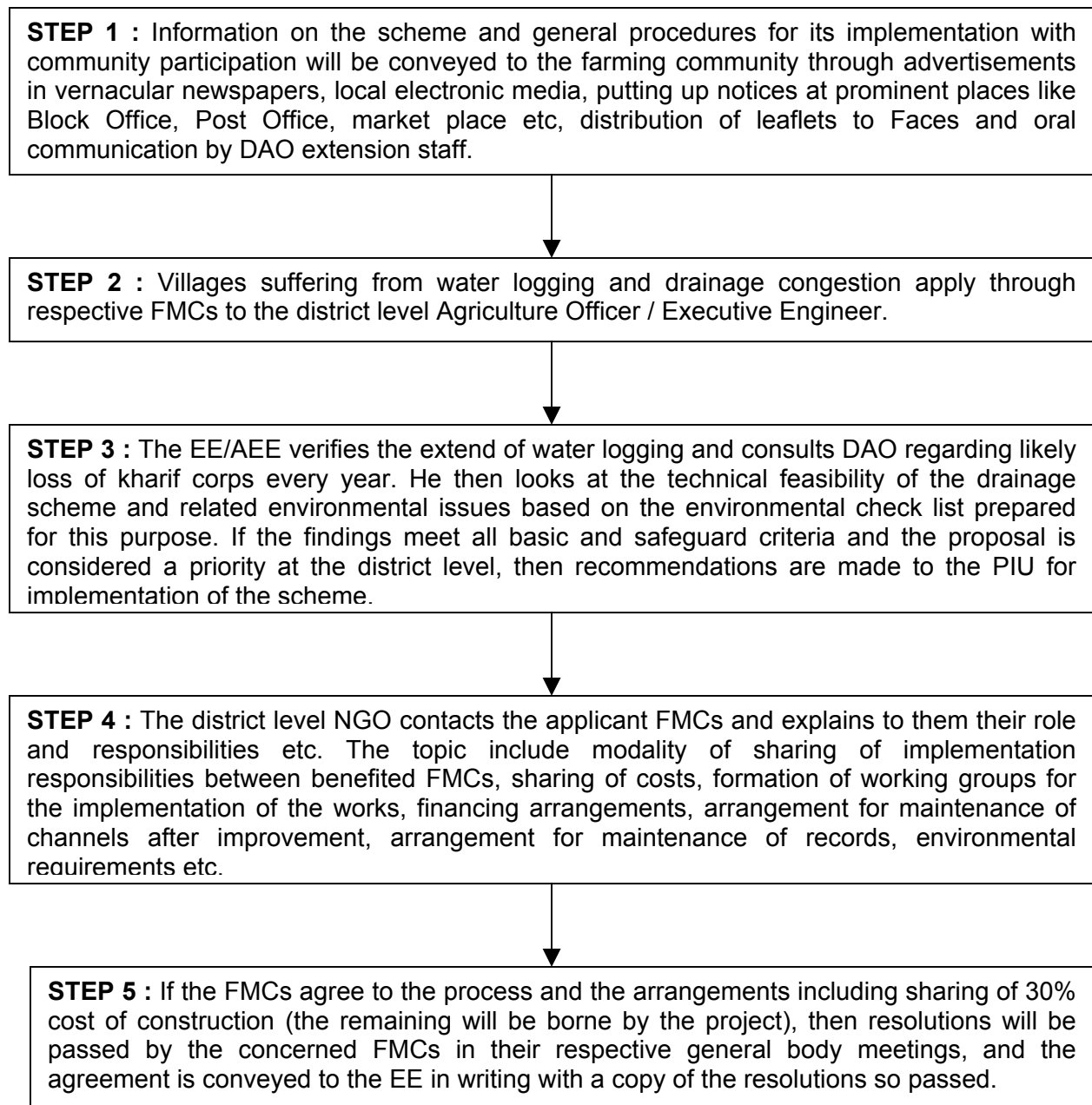
বিঃদ্রঃ প্ৰ-পত্ৰৰ ফটোষ্টেট কপি কৰি আবেদন কৰা আবেদন পত্ৰও গ্ৰহণ কৰা হ'ব।

GUIDELINES FOR THE SELECTION AND IMPLEMENTATION OF LAND DEVELOPMENT PROGRAMME

The prioritization of blocks / districts for land development programme will be made based on the following criteria :

- ◆ Ratio of waterlogged / marshy areas to total geographic area.
- ◆ Ratio of waterlogged area to total net cropped area.
- ◆ Ratio of waterlogged / marshy areas to total cultivatable area.
- ◆ Percentage of small and marginal farmers in the block / district.
- ◆ Percentage of SC/ST farmers in the block / district.
- ◆ Percentage of land (drainage improvement) development cost.

The Guidelines for the selection of individual schemes including a Ten Step procedure for the implementation of the programme is given below :



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graph TD; S6[STEP 6] --> S7[STEP 7]; S7 --> S8[STEP 8]; S8 --> S9[STEP 9]; S9 --> S10[STEP 10];
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STEP 6 : The EE/AEE arrange to carry out topographic surveys of the drainage channel and adjoining areas (as necessary) and prepare designs and cost estimates for the proposed drainage improvement of the effected areas. For large drainage schemes, the designs needs to be checked by independent agencies like the Water Resources Department or IIT, Guwahati. The complete proposal is then submitted to the PIU for administrative approval and inclusion under the project programme.

STEP 7 : Detailed cost estimates with drawings of the proposed works are then returned to the participating Faces for review and agreement on implementation arrangements including sharing of costs between the Faces (30%) and the Government (70%). This needs to be agreed between participating FMCs and in their respective general bodies through a formal meeting before actual execution can be taken up.

STEP 8 : The works (including minor structures, if any) will be implemented by the participating Faces under the supervision of the Engineer Wing of the Agriculture Department. The works will be allotted to the faces on current schedule of rates approved by GOA. Measurements will be carried out every 15 days and payments will be made within 2 (two) weeks of recording of the measurement so that the beneficiaries do not suffer due to shortage of funds. Faces will be given an advance payment before the commencement of the work, which will be adjusted from subsequent payments. All payments will be made after adjusting for the beneficiary contribution of 30%

STEP 9 : The district level nodal NGOs appointed under the project will facilitate all activities by the participating Faces. They will also provide active guidance for group formation and group activities related to the implementation of the schemes. Any delay in implementation or payment to the participating Faces, or inferior quality of construction etc. shall be promptly drawn to attention of district administration / PIU by the NGO.

STEP 10 : Before, during and after execution of the works, photographs will be taken to record of the progress at various stages. On completion of the works, a maintenance schedule will be prepared by the Faces (in consultation with NGO and engineers) and submitted to the PIU with Faces commitment to adhere to the programme.

AGRICULTURE MECHANIZATION

Performing agriculture operation as per schedule time is key to higher level of production and productivity. The available power ensure timely cropping sequence. The availability of adequate power for agriculture operation is now recognized as an important requirement to achieve higher production per unit area. The optimum power input for good yield is above 1 HP per ha. As against this, the current power availability to the farmers is nearly 0.4 per ha. in the state. Acute shortage of power on the farms has become one of major bottlenecks in increasing the are under multiple cropping. Further as agriculture operation needs to be covered within a short span of the cropping season it becomes difficult on the part of the farmers to cover all the areas under his cropping schedule in time without mechanization. Because the prolonged monsoon and consequently short field preparation time available to the farmers and to increase the present cropping intensity, it is imperative that the state should quickly adopt mechanization.

We had already started initiative in the mechanization programme under ARIASP. It is envisaged that there is going to be a significant requirement of tractors and power tillers in the coming years from the farmers of the state. Farm mechanization activities would foster formation of 750 Agro Service Groups (ASG) made up of 10-20 small farmers acquiring tractors within a well functioning FMC, and another 1500 ASGs acquiring power tillers, for own use and provision of contract farming services.

Groups would be encouraged, and supported through appropriate training course, to operate this machinery as a business, maximizing both on farm and off farm use. Procurement arrangements would be similar to that for irrigation equipments, allowing ASGs to select their model and equipment supplier of choice. The unit cost for the tractor will be Rs. 4 lakh and for the power tiller will be Rs. 1.20 Lakh.

Under the ASG approach, groups are encouraged to hire their machinery to non group members and for non farm work whenever possible.

AGRICULTURE AND HORTICULTURE COMPONENT

Strengthening of Service Delivery System of Extension

Assam has a large public sector agricultural research and extension system consisting of the Assam Agricultural University (for research) and the Departments of Agriculture, Animal Husbandry, Dairy Development and Fisheries (for extension). The line departments have a network of field functionaries at the district, block and village levels. Training and Visit (T & V) system made a significant impact in the agricultural development of the state since last two decades. It is basically oriented towards transfer of technology for increasing production and productivity. The research and extension system was developed primarily for increasing food production and is based on packages of technology for crops, especially rice and a linear system of passing the packages from research to extension to farmers. Both systems need to re-engineered to meet the needs of a market-driven, commercial and diversified agriculture. Diversified market demand, increasing environmental concern and necessity for export have contributed to decreasing relevance of the present extension system. The extension system now has to address new issues like marketing, social capital formation, group dynamics, conflict resolution and natural resource management. A shift is required from 'message based' extension to 'broad based farm management' approach. Moreover, there is also a greater need to focus the women who perform a major role in agriculture particularly in post harvest management.

Major deficiencies include :

- ◆ Centralized, top-down, target-driven approach with little flexibility to address priority concerns of farming communities at the local level;
- ◆ Limited coordination across departments and weak convergence of on-going programs for having a holistic, farming system based, livelihood enhancing approach.

- ◆ A system compartmentalized by rigidity of disciplines, schemes and commodities with a focus on rice relative to other commodities and enterprises.
- ◆ Emphasis on production, with weak capacity in post-harvest and marketing services;
- ◆ Inability to effectively utilize available staff due to limited operating budgets and lack of in-service training; and
Insufficient use of modern tools of information and communication technology.

A. Reforms in Agriculture Extension

- ◆ Introduction of the Agriculture Technology Management Agency (ATMA) concept to revitalize the extension system, devolving public extension funding and management down to district level, actively promoting increased farmer involvement in planning and implementation of programmes, promoting collaboration between line Departments, linking extension more closely to market requirements and encouraging and facilitating partnership with private service providers.
- ◆ Making agriculture research more farmer oriented in planning and implementation with appropriate focus on natural resource management and biodiversity issues;

A) Adoption of ATMA Models in the District : With a view to decentralize decision making at the district level and to ensure effective participation of farmers in programme planning and resource allocation, a model in the line of Agriculture Technology Management Agency (ATMA) will set up initially in two districts namely Kamrup and Nagaon on a pilot basis. In the event of the success of the pilot programme, ATMA model will be extended to four more districts in the 2nd year and in five districts in the third year. It will be a major step towards integration of demand driven extension and research activity by forging a link between farmers-scientist and extension system.

Features of the new system would include :

- ◆ Decentralized extension funding, planning and execution down to district / block level, with linkage to both the district administration and panchayats (local government)
- ◆ Flexible extension funding arrangements, facilitated by the legal status of ATMAs as registered societies.
- ◆ Active participation of farmer advisory committees in planning and execution of extension activities, particularly at the block level.
- ◆ Active collaboration between line Departments, responsible for agriculture, horticulture, livestock, fisheries and forestry.
- ◆ Partnerships with NGOs and private sector service providers and
- ◆ Stronger linkages with credit providers and with traders in the market supply chain.

ATMA is essentially a management concept that more effectively utilizes the manpower of existing extension and other support services in the district by fostering coordination among line departments and partnership with farmers committees, women's groups, NGOs and private sector to develop and implement a decentralized extension agenda. Each district ATMA would be established as a Registered Society with the Governing Board having representation of all line departments, Assam Agriculture University (AAU), farmers, fishermen, livestock producers, women groups, major rural NGOs, input suppliers, marketing organizations and banks. As a society, it has operational flexibility to undertake a range of extension related activities as decided by the farmers and other stakeholders in the district. It can receive funds from different sources (not just government) and generate funds from its own programmes to contribute to its financial sustainability. District extension strategy would be directed by the ATMA Governing Board, while operational activities would be guided by a Management Committee. The day to day activities would be coordinated by a full-time District Extension Coordinator, supported by a Deputy Extension Coordinator and Clerical support.

The ATMA management concept brings together researchers, extension workers and other relevant stakeholders such as farmer organizations, NGOs, input supplier and banks, to conduct diagnostic surveys in each district. Through participatory rural appraisals, these teams will determine the major production opportunities and constrains (markets, input supplies, financial and social factors, natural resources base) and identify the main problems affecting the technology service delivery and limiting its performance. A five-year District Agricultural Development Strategy (DADS) would then be prepared for the district, setting out technical objectives and determine the funding requirements for need based technology dissemination and farmer organization/market chain development activities.

I. Block Resource Centre : At the Block Level Line department staff would together as an inter-linked block Technology Team (BTT). With support from ATMAs, the BTTs would adopt farming system approach of their work program. Their capacity to operate as broad based Farm Advisors linking farmers with multiple sources of information and markets would be enhanced through appropriate training, better communication facilities, technical literature, equipments and setting up a Block Resource Centre (BRCs). In all 123 Dev Blocks Resources Centres will be created. These centers would be refurbished existing government buildings, and would become the local point for BTT members to interact professionally amongst themselves and with farmers the BTT teams will select the members of the Farmers Advisory Committee (FAC) by taking consideration of experience and involvement in particular field.

II. ATMA Head Quarter : The day to day activities of ATMA will be coordinated by a full time Extension Coordinator. The Extension Coordinator will be a senior DDA/JDA from the Agriculture Department. The EC will be supported by a full time Deputy Extension Coordinator. The District Project Team will comprise of the following :

a. Extension Coordinator (EC)	-	1
b. Deputy Project Coordinator (DEC)	-	1
c. Accountant	-	1
d. Clerk	-	1
e. Grade IV	-	1

ATMA Head quarter will be established in 11 ATMA districts.

III. Institutional Structure : The Project institutional structure on which the ATMA will be governed is shown below :

A) Governing Body of ATMA :

Table-1. Governing Body of ATMA

1.	Deputy Commissioner	Chairman
2.	Additional Deputy Commissioner (Dev.)	Vice Chairman
3.	Extension Coordinator of ATMA (Joint Director of Agriculture)	Member-Secretary
4.	District Agricultural Officer	Member
5.	District Fisheries Development Officer	Member
6.	District Veterinary Officer	Member
7.	Representative from KVK / ZRS	Member
8.	President / Secretary, District PPS	Member
9.	One Livestock Producer	Member
10.	One Fisheries Producer	Member
11.	One Agriculture Producer	Member
12.	Representative from Women Farmer's Interest Group	Member

13.	One SC/ST farmer representative	Member
14.	Lead Bank Officer of the District	Member
15.	Representative from District Industries Centre	Member
16.	Representative from Agriculture Marketing Board	
17.	Representative from Input supplying organisation	

B) Management Committee of ATMA :

Table-2. Management Committee of ATMA

1.	Extension Coordinator ATMA	Chairman
2.	District Agricultural Officer	Member
3.	Senior Agriculture Development Officer	Member
4.	District Veterinary Officer	Member
5.	District Fishery Dev. Officer	Member
6.	District head of other appropriate line department that may be important within a district.	Member
7.	Head, Krishi Vigyan Kendra	Member
8.	Chief Scientist, Zonal Research Station	Member
9.	One Representative from District PPS	Member
10.	Two Representative (one invariably a women) of farmers organization (one year rotation basis)	Member
11.	Officer in Charge of Block Technology Centre	Member

IV. Strategic District Agriculture Development Plan (SDADP) : The ATMA management concept will bring together district level to researchers, extension workers and other stakeholders outside the public sector at district level to conduct diagnostic surveys with the rural population of the district. Researchers (mainly from Regional Agriculture / Horticulture Research Stations (RARS) and KVKs but backed by staff fro AAU) and extension workers will be joined for diagnostic work by other government staff from the agriculture and other line departments, NGOs and representatives of private sector processors, inputs suppliers, banks and farmer representatives. Through extensive interaction with farmers and rural communities including participatory rural appraisals, these team will identify the main problems currently affecting the technology dissemination system and limiting its performance or sustainability. They will also determine the main opportunities and constraints (markets, input supplies, financial and social factors, natural resources base, quality and form of extension delivery etc.) which should be taken into account to improve local relevance and impact of support services, adaptive search, development and information transfer programmes and mechanisms. The team will formulate a Strategic District Agricultural Development Plan (SDADP) for the district, setting out technical objectives as well as innovations to be introduced into the organization and founding of need based technology dissemination and other support services.

The SDADP will identify general objectives for the next 4-5 years and specific actions plus implementation responsibilities of the public sector and other stakeholders for the first year. Annual District Plans will be prepared by aggregating Block Action Plans which will be implemented by the Block Technology Team.

From the district strategies, Block Action Plans be prepared, sanctioned by farmer committees and implemented by the BTTs. These plans will be updated every year – successful completion of the current plan being a pre-condition for financing for the next year. Action Plans would determine how available funds would be spend locally each year, based on the agreed need for adaptive research by the participating RARS, farmer-participatory trails, demonstrations, field days and the development of extension recommendations for the coming season, as well as

linkages with input suppliers, banks, commodity buyers/processors. Emphasis will also be laid on improving the quality of technical advice, either by upgrading the skills of line Department Subject Matter Specialists (SMSs) by identifying other sources such as KVK staff and technicians in the private sector, or by accessing new sources for advisory /consultancy services from the market where stakeholders agree that this is more appropriate. Formation producer organizations around business themes would be an integral aspect of the new extension activities.

V. Inter Departmental Working Group :

At the state level, an Inter Departmental Working Group, composed of Secretaries of the relevant line department would be established under the Chairmanship of Agriculture Production Commissioner. This group would provide a mechanism from monitoring the progress of the ATMA Programme, harmonizing project activities with the on going programmes funded by GOA & GOI.

B. Demonstration

The extension programme would focus more on demonstration of proven technologies, new farming system, and improvement in the present practices with particular focus on Integrated Nutrient Management (INM) and Integrated Pest Management (IPM). The Project will lay focus on crop diversification and promote crops development where the state has a comparative advantage and demonstration will be conducted in these crops.

Field crops like rice, oilseeds, wheat, horticultural crops like cabbage, cauliflower, tomato, potato, orange, banana and pineapple have been selected for promotion under the project in consideration of natural advantage the state has in their production. Another important component of crop demonstration will be forage crops, which will integrate crop production with livestock production.

While organizing demonstration, quality will be emphasized rather than number of demonstration conducted. Demonstration will be organized keeping in view the need of the farmers and field days will be an integral part of each of the field demonstration. Success or failure of demonstration will be judged on the basis of acceptance of technology by nearby farmers. To monitor the effect of demonstration, impact evaluation will be made at periodic intervals. The selection of the demonstration plots will be through detailed study of its suitability and those that facilitate adoption of the technologies for which demonstration are being held. The project support for these demonstrations would be in the form of cost of inputs, field day and training etc. The achievement and impact of these demonstration will be evaluated in terms of adoption of demonstrated technologies by the direct beneficiaries and non-beneficiaries in FMC and in the adjoining villages during the following years rather than in terms of physical numbers of demonstration.

i. Integrated Crop Management (ICM) : The ICM demonstration will cover the complete package of practices from land preparation to harvesting and post harvest handling and marketing produce in a farming system mode rather than covering only once or two recommendation for a given crop. These will also cover, wherever possible, improved practices for sustainable management of land and water, resource conservation technologies.

ii. Popularizing the Components of INM : Inorganic fertilizers, Bio-fertilizers and organic/green manures are used in an integrated manner for adoption INM. Under the AACP, strategy has been taken to develop organic through the effective use of NADEP method. The component of composting are taken for the following reasons :

1. Sustainable agriculture emphasizes the conservation of own resources. For a farm to be sustainable, farmers must minimize their purchased inputs and rely as much as possible

on the renewable resources of the farm. This is most important where these inputs are often not available or affordable. Use of organic matter and green manure minimize the need to purchase.

2. Chemical fertilizers and Bio-fertilizers are available in the market. On the other hand, organic manures are generally not available in the market.

iii. Integrated Pest Management :

a) Objective : IPM will be another important component of the demonstration. The main objective of this component is to ensure the capacity building of the farmers to analyse on their own the agro-ecosystems and find out threshold levels of the pest and defenders in order to decide about the appropriate intervention under the spirit of IPM.

Since the success of IPM required that IPM demonstration should cover a fairly large area, these demonstration will cover all crops grown in a given village. It will include cultivation of pest resistant /tolerant varieties, adoption of agronomic practices to minimize pest attack, promotion of use of bio-pesticides in the selected IPM villages.

The demonstration of IPM and popularization of INM components will be jointly organized to the extent possible and all kind of convergence will be ensured.

iv. Fodder Crop Demonstration

The location of these demonstrations will be selected in consultation with the Dairy Department and Veterinary department in order to support the Dairy Cooperation/SHGs/Farmers who have been covered during the Phase-I ARIASP.

v. Demonstration on low cost Vegetable Nursery : To meet the growing demand of the vegetable seeds and make the farmers sustainable in their needs of vegetable seeds, demonstration will be conducted.

v. Floriculture demonstration : Floriculture as income generating venture for woman is gradually picking up in semi urban areas particularly in the districts of Kamrup, Tinsukia, Cachar and to a limited scale in some other districts. Raising seasonal nurseries, pot culture, attractive display of Floriculture products, sale of cut flowers, institutional gardening etc. are becoming pet subjects for farm woman. The market of such products being gradually expanding and floriculture itself being a sunrise area, it is time to encourage them to venture into the sector.

vii. Demonstration on Agriculture implements and storage etc : Since most of the farmers in the state are small and marginal farmers, as low cost of implements is a prerequisite for adoption by the farmers. Demonstration will be conducted on implements suitable for the farmers of the state on the basis of needs of identified in the PRA.

High relative humidity and temperature of the state is not conducive for storage of the seeds in the open condition. Both these factors leads to the fall of germination in the storage. These factors also encourage high insect infestation in the storage grains and seeds. Because of these conditions storage of seeds particularly of wheat and pulses is very difficult.

C. CAPACITY BUILDING :

In the changing agricultural scenarios in the state, the information needs of the farmers also undergo changes. The extension functionaries are need to be equipped to deal with the

fast changing situation with the shifting of needs from commodity production approaches to farming system approach. The extension functionaries should be able to understand the economy of the farmers to effectively identified the needs the farmers. In the present context, better understanding of participatory approach, financial management and an understanding of the market is an integral part of the training needs for both farmers as well as extension functionaries. The department will try to impact training on new extension methodologies as well as on issue relating to marketing so that the extension message shifted from a simple focus on production and productivity and is more in touch with the ground realities.

I) Capacity building of Farmers

- (i) The training of farmers will encompass aspects of ground formation, planning and management of community works and maintenance of assets, technologies relating to new farming systems, crop diversification, integrated farming approach, marketing and market study skill etc. Market study to develop marketing skill will be the focus of training. The training programme will be drawn up for specific areas and will be dependent on the outputs received from the demand driven research that has been carried out by the research institutions under the project. The PRA exercise also will highlight training needs but the basic concept of this programme would be based on farming system development. The DAO/ AAU has facilities for organizing such training programmes in their institute. The selection of the farmers would be based on the predominance of activities in the village and would have representative participation from Agriculture, Livestock, Fisheries, Sericulture, Minor Irrigation etc.
- (ii) Women play pivotal role in management of resources of household and community. Generally women are left out of training programmes designed for skill development required after introduction of new technology or innovations. Women's skill up gradation and education will remain a precondition for successful environment management. Women are to be always at the center of sustainable agriculture programme. Active participation of women will be ensured in all the trainings and demonstrations that are to be conducted under AACP.

II) Capacity building of the Extension Staff :

Staff at different levels would be exposed to training in a variety of subjects /aspects with a view to improve their technical, marketing and organizational capabilities. The training includes the following :

- (a) Monthly cluster trainings (i) ADO training (ii) Training of Agriculture Development Officers (iii) Study tours (iv) Training outside the state (v) External Training.
- (b) In the ADO training which will be conducted in the respective district once in a month, resource person from the KVK / RARS / Department will take active part on the technical problems identified through PRA.

MARKETING COMPONENT UNDER AACP

INTRODUCTION

Marketing is the final link in the chain of production activities of agriculture sector and this is a crucial need that stimulates and promotes production activities and at the same time, ensure remunerative prices to the producers. Organised marketing therefore, is a precondition to sustained production programme, more particularly, in respect of agriculture production. Agriculture marketing in the State is largely unorganized and predominantly in the hands of

intermediaries such as retail traders, wholesalers, the pre harvest contractors and others. There is lack of final link with the agriculture surpluses generated in different production clusters, more particularly, horticulture produce marketing is virtually unorganized and in the hands of private middlemen who exploit the producers especially in absence of market information and completion.

There is a network of rural markets (Haats) in Assam. These are often poorly linked in terms in information and transport with one another. These unregulated markets are likely to become even more important as demand increases in the urban areas. The price variations are wide in different markets due to the missing market link. Therefore, strong interventions in the Commodity Marketing has become the need of the hour. To assist producers to adapt and complete more effectively in changing market situations, several initiatives would be supported to liberalise marketing arrangements in Assam and develop closer connections between extension activities and the operation of the market supply chain including.

- (i) Amendment of the Assam Agriculture Produce Committee Marketing Act. to facilitate private sector involvement in contract production and development of wholesale markets.
- (ii) Making marketing extension a core aspect of extension activities in all the Departments (balancing the traditional focus on production) and establishing closer working relationship with traders associations.
- (iii) Change line Department emphasis from short price term information to assembling longer term market intelligence and
- (iv) Piloting of an Enterprise Development Grant Fund.

Enhanced market extension service will be provided to farmer groups and self help group (SHGs), co-operatives; and to processes and agri-business. Emphasis would be on ATMA districts, their needs and requirement would be feed into the District Agriculture Development Plans and Block Action Plan. The local extension agents will work with the groups to first help diagnose their needs and constraints and then help from draw up an action programme. Extension activities will be highly practical and will include training programmes, presentation by trader and processors; market research carried out by farmers themselves with support from market extensionists; and action programmes to consolidate loads and facilitate bulk transport. To achieve this change in extension focus from a traditional production orientation to a more commercial one will require the training of field staff. Training courses will cover the following topics, information gathering; resource audits; market research; diagnosing farmers constraints and opportunities; forming and working with farmer groups, preparation of action plans; marketing extension techniques, working with the private sector and farmers, market information – what it is how to access and use it, and post harvest advice.

Marketing Skill Development

Because of the present technology oriented approach under T & V system, the extension workers lack knowledge of Agricultural Marketing like supply and demand, information gathering, market survey and analysis and of the marketing chain. Therefore, they are required to be trained through training modules and market visits. The extension functionaries will play an active role to enhance competition in the market and by providing necessary information to the farmers.

Field Management Committees (FMCs), SHG and general farmers and their linkage will be particularly helpful for marketing of particular type of commodities. The formation of FIG will particularly help to reduce the transportation costs of the farmers and thereby enhancing profitability of the farmers. The FIG will require training for their sustainability. The capacity

building will help in improvement. The table below sets out in general terms how these improvements can be made.

Table 1 : Marketing Skill Development

At Project Level	Specialist to help orientation and training of Department Staffs + Market Infrastructure Investment.
At State Level	Understanding and knowledge of the consumer, the market and their requirements of the agri-business and what raw material they want.
At District Level	Knowledge of state and local markets and production potential. Understanding of marketing extension technique.
At Block Technology Team Level	Enough knowledge about marketing to help farmers define their problems.
At Field Level	Able to help farmers form interest groups and guide them on assistance that the ATMA, Pilot Enterprise Funds can bring.

Capacity Building of Extension Staff :

A successful marketing programme will require that there is a shift in both the attitude and focus of the extension functionaries. Expertise will need to be built up at the State, District and Block level. The extension functionaries will need to build up market knowledge, experts as well as actively encouraging private / public partnership. To be effective the Departments will have to build up a body of markets knowledge for individual product ranges and to achieve these objectives specialized, practical training will be necessary.

Marketing Extension would be start by assisting the Departments establish Marketing Unit with a basic knowledge of production resources in the state, and on markets – product flow channels, demand and the requirements and prospects for the individual products. Senior Market Advisers would engage with the private sector in developing marketing opportunities and Act as commercial business advisers to farmer organizations and as a trainer for extension staff. They would maintain close links with the private sector and with the other agencies supporting commercial developments in the rural economy. A highly practical training course in Marketing and Marketing extension will provided to the field staff in the three line departments.

Role of FIG in marketing under AACP :

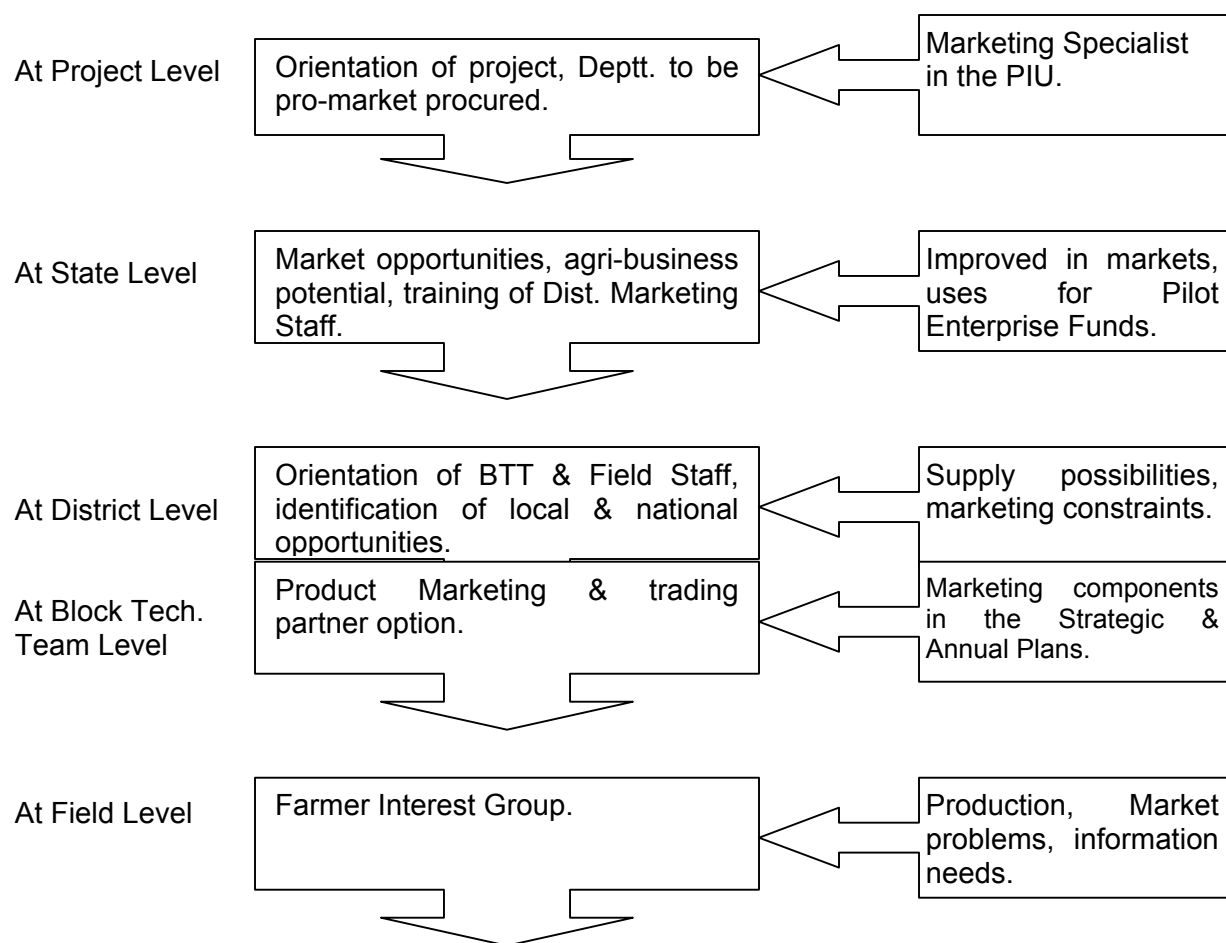
The formation of Farmers Interest Group will be encouraged under the project. These are group of farmers with a common interest in agriculture. This is most likely to focus on individual product. It could also focus on other common interest such as access to share transport, collective inputs or access to credit. Farmers groups will come together for training and technical expertise. FIGs access can evolve and develop to take on more financially important function. The table below show some of the possible examples that will be relevant to the circumstances in Assam.

Table 2 : Type and Functions of FIG

Type	Functions
Sharing transport	Group consolidates loads to as to fully use vehicle and use larger trucks with lower unit costs.
Delivery to larger market	Tanking product to the market that is the next step up to chain. The offers the potential at higher prices and greater sales volumes (can be combined with share transport)
Contact productions	Often direct selling to agribusiness wanting to secure a reliable supply of raw materials at the require quality Likely examples includes milk, pig, bamboo shoot processors and animal feed mills seeking maize.
Organizing Collection	Larger scale wholesalers traders and agri-business will by direct from farmers provided sufficient critical mass (generally a truck load) can be consolidated together by a farmer group.
Programming production	A farmer group organizes their production so as to supply product over an extended season and therefore secure market share.
Collective buying inputs	Group buying inputs e.g. fingerlings, tentative, packing, can achieve consideration cost savings.
Joint storage	Sharing in hiring storage facilities can enable farmers to gain access to suitable store at reasonable prices and to be able to sell products when prices increases.
Value added	Sharing technology to semi process products or by developing a brand or quality standard to achieve higher prices.

Market Information : In practice there are two types of market information – short and long term. Short term price and supply information are useful in deciding which market access their sale and can help in terms of market negotiation. Market information available to farmers is typically short-term information on prices and supply of specific products, which is of limited practical use to farmers and traders. At the same time there is a dearth of the longer terms market information (or intelligence), which would be of more practical use to farmers, on the market characteristics of individual products (quality, quantity, typical prices, demand trends, packaging) and contacts for potential buyers, end-users transports, wholesale markets and traders. Information like this is more valuable to farmers as it can used by them go plan and modify their longer term approach to enterprise selection. This aspect will be strengthened under the project, focusing on understanding defining the information needs of the farming and trading communities, modifying the existing collection system to match these needs, converting this information into useful reports and facilitating the disseminating of this information.

Table 3 : Flow of Information



At the Head Quarter, a team is already constituted. The Primary functions of the team at the Head Quarter will be to build up and understand the way the market operates, its size and its changing at the state level. They will be expected to provide information and training to district level subject matter specialist on marketing. They will have a role in policy advise, strategy and maintaining contact with agri-business and maintaining private-public partnership.

At the district level initially in the ATMA districts there will be one subject matter specialist in the rank of Senior Development Officer in marketing and farming as a business. Their responsibility will be to investigate and understand the local market. They will be expected to develop relationship with traders and local agri-business and develop private / public partnership. They will trained and supports functionary at the block level and specially help the Block Technology Term (BTT) so that they can reflect the marketing issues in the strategic and work plans. They would be trained so as to understand marketing extension and the options and alternative ways the marketing intervention can help improve farmers income. They will also need to build up of the production possibilities and resources within a district and so that the state level marketing team are fully brief as to various production potential.

Within the BTT the agriculture officer of the Block Technology Team along with the team will be provided training on marketing so that they can help farmers to find the marketing problems for incorporating into Strategic Agriculture Development Plan. They will interact and encourage the Farmers' interest Group (FIG). The BTT team will brief district level SMS of

marketing from the crop production potential, local resources and specially on active farmer groups.

The Village Level Extension Worker will provided short orientation process by the BTT on marketing, farmer group functions and the possibilities of FIGs taking active steps to improve their product marketing including accessing the Pilot Enterprise Fund. They will interact and encourage the FIGs. The BTT will brief district level SMS marketing from their crop production potential, local resources and specially on active farmers group.

Pilot Enterprise Fund

A pilot Enterprise Development Grant Fund (EDGF) will be established under the project to help establish new ventures to exploit market opportunities in commodity trading and agribusiness. Relatively small amounts of money would be made available to support the marketing and commercial activities of farmer group. Funds would not be used for capital investments, but as seed money to start the process of commercialization of farming livestock production and fishing. Line Department staff and NGOs would assist farmer / community groups to proposals and apply for funds. Funding approval would be relatively quick and with the minimum of bureaucracy. The kind of programme the funds will be used for are market research; test marketing; basis feasibility studies; bringing in specialists to advise on aspects such as new production and value added/ processing techniques; understanding market oriented field trails e.g. new cultivars; market study tours; training course; under-writing new transport arrangements to try out new arrangements e.g. consolidated loads and hiring pick-ups not hand carts to transport product to market.

Up-gradation of Rural Markets :

Rural haats and emerging primary wholesale markets are seen as an increasingly important mechanism for onward distribution of Assam's agricultural production. Twenty four unregulated rural (primary) wholesale markets and 50 haats will be selected on basis of their expanding sales volumes – provided that the market site is owned by the Panchayat without encumbrances; there is sufficient area available for development; and that the Panchayat will contribute 20% to the development costs and undertake all future maintenance Preliminary survey of haats / rural wholesale markets is already underway to establish a short list of potential markets for development – to be followed by a feasibility study of two priority markets to establish a clearer picture of costs, benefits and operational options.

Market design will be based on the needs of the farming and trading communities (e.g. short term storage, lighting, telephone connections, protection from sun, rain, proper drainage, toilet and washing facilities, pukka roads and off road parking) and will encourage the development of a network of supporting businesses (e.g. cafeterias with dormitories, telephone kiosks) to promote the markets development and to generate additional funds. It is envisaged that the programme will include investments in agricultural and horticultural markets as well as fish and livestock markets, coupled with rural village haats.