Local Facilitation Team (LFT): The project team developed a strategy for location specific Social Mobilization (SM) processes at community level. It proposed the formation of a social mobilization group with the purpose to provide an institutional entry point for Social Mobilization at community level. Informal local groups were formed in response by local communities in each pilot site to coordinate local action with the project and implement the adaptation options at community level.

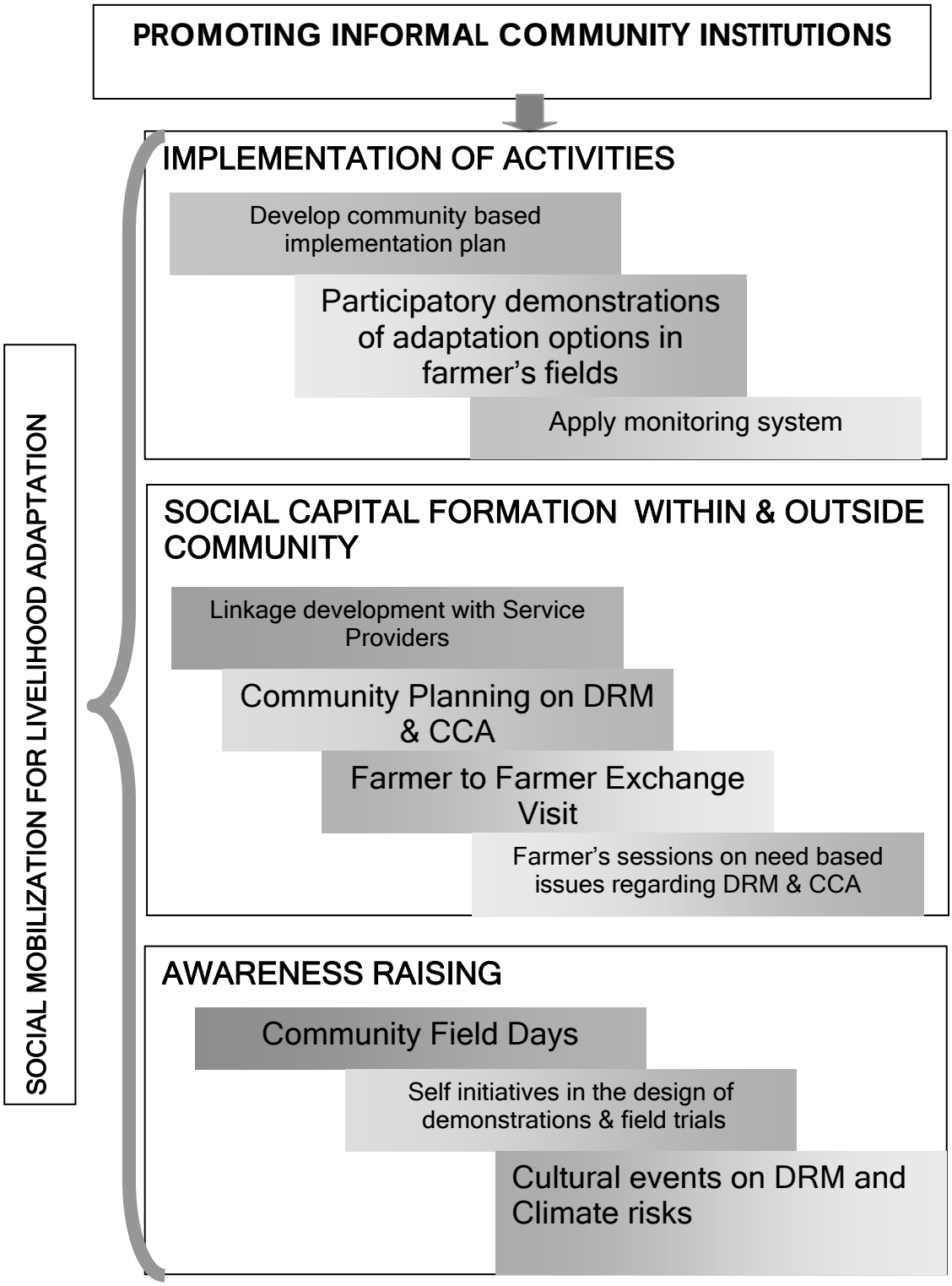


Fig.8 Community level Social Mobilization Strategy (SMS) Framework use by the project

The importance of LFTs and their role was discussed during the training sessions organized for community representatives, sub-assistant agriculture officers (SAAOs) and disaster management committee members. The local stakeholders and members of the Local facilitation Team at village level are School Teacher, Imam, Farmer's representatives, village level DMC members and union level sub-assistant agriculture officers (SAAOs). During project implementation in some cases the role of the LFT was taken care of by the village committee. In practical terms, the LFTs participated in the process of selecting adaptation options considered useful for their respective village. It is mportant to highlight in this context that the project promoted the idea that communities, who are the end users of any option, would take decision on any options they preferred to sequentially test at field level through demonstrations. In practice however, it was observed during implementation that the decision making process was often much influenced by the views of the extension workers - a challenge to work on in the second project phase. The community groups took an active role in all informal learning and awareness building session organized at local level. The Social Mobilization Framework for improving livelihood adaptation to climate change as applied in the project is presented in Fig.8.

6.3 Identification of adaptation options

6.3.1 Selection and validation process

Local adaptations to climate variability practiced to some extent among farmers in the study area can be categorized as: a) traditional, locally managed responses (e.g. pond excavation, retention of rainwater in canals), b) state supported responses (e.g. deep tube well irrigation) c) alternative innovative responses (e.g. mango farming, livestock and poultry/birds rearing) exist in the study area. The adaptation practices applied locally and introduced by national development, research and extension organizations were collected and documented.

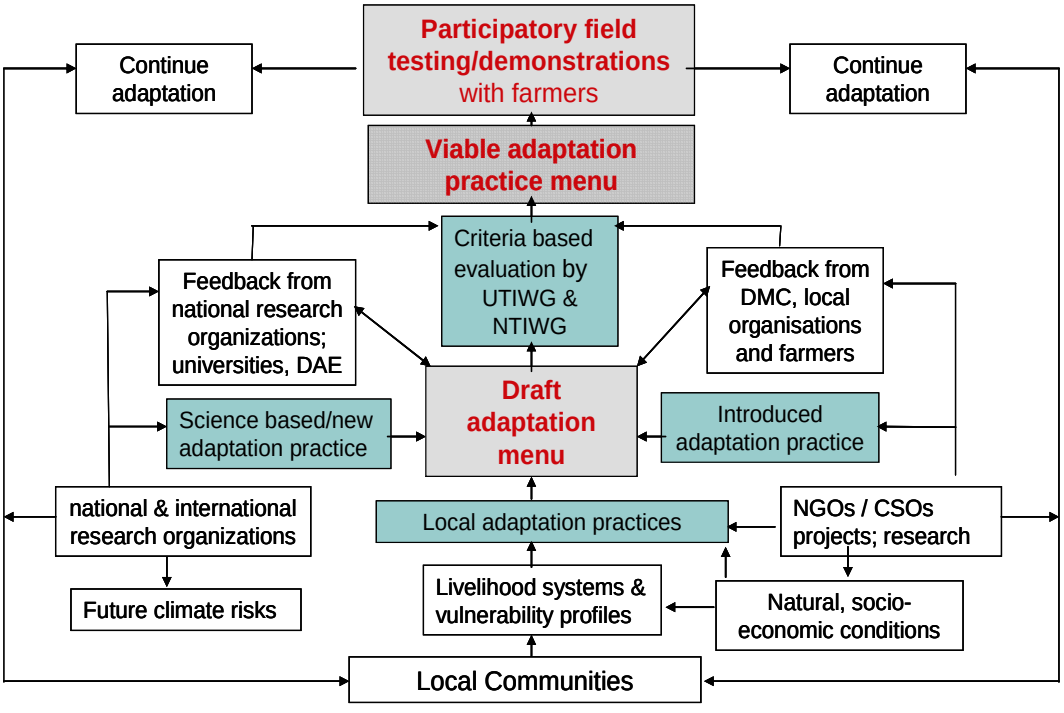


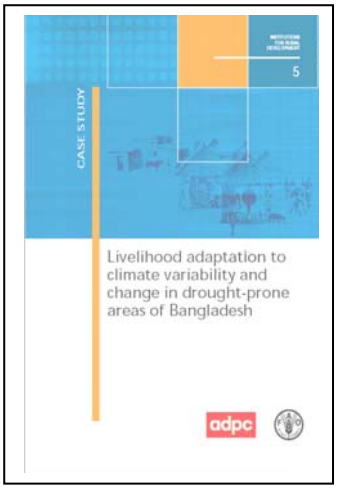
Fig 9. Overall framework and institutional structure describing activities and process of selection, evaluation and prioritization of adaptation practices for drought-prone areas in Bangladesh.

Viable adaptation options were selected through a sequence of evaluation processes (Fig.9) at different levels starting from upazilla-level DMC members, Upazilla level Technical Implementation Groups (UTIWG) and National level Technical Implementation Working

Groups (NTIWG). Consultative meetings and brief feed back workshops were also organized with the local research institutions (BARI and BRRI) and developmental organizations

6.3.2 Selection of good practice options menu

The adaptation options were evaluated with the UTIWG and NTIWG for their technical suitability in drought-prone areas. The outcome of the stakeholder evaluation was integrated into the multi-criteria analysis and a good practice option menu was prepared. The details of selection criteria and descriptions of the good practice menu are presented in the summary project report entitled "Livelihood adaptation to climate variability and change in drought prone areas of Bangladesh – Developing institutions and options: A case study". Lists of adaptation practices suitable for different seasons (*kharif I*, *kharif II* and *rabi*) were recommended for field demonstrations (rabi 2005, *kharif I, kharif II* and *rabi* 2006, *kharif I, kharif II* and *rabi* 2007). The list of demonstrations selected after validation were given in Table 1.



(http://www.fao.org/sd/dim_pe4/pe4_061103_en.htm

Table 1. Categories of good practices recommended for demonstration after validation

Sl. No	Categories	Adaptation practice	Season
1.	Agronomic management	Seedbed method for T.*Aman* rice	*Kharif – II*
2.		Manures and composting	*All*
3.		Depth of transplanting for T.*Aman*	*Kharif – II*
4.		Strengthening field bunds (Ail lifting)	*Kharif – II*
5.	Water harvesting	Re-excavation of traditional ponds	*All*
6.		Re-excavation of khari canals	*All*
7.		Mini-ponds	*All*
8.		Supplemental irrigation	*Kharif – II*
9.	Water use efficiency	System of Rice Intensification	*Rabi*
10.		Direct sown rice (drum seeder)	*Rabi*
11.		Drought resistant rice varieties	*Kharif – II*
12. a)	Crop intensification	Green Manure – T.*Aman* system	*Kharif – I*
b)		*T. Aus* – Chini atap system	*Kharif - II*
c)		*T. aman* – Mustard/linseed system	*Kharif - II*
d)		*T. aman* – Chickpea	*Kharif - II*
e)		*T. aman* – Mung bean	*Kharif - II*
13.	Alternate enterprise	Mango cultivation	*All*
		Jujubi cultivation	*All*
14.		Homestead gardens	*All*
15.		Mulberry intercropping in rice	*Kharif - II*
16.	Alternative energy source	Community based biogas and tree planting	All
17.	Household level energy efficiency	Improved stove	All
18.	Post harvest practices	Seed storage for higher viability	All

Selection criteria included (a) drought mitigation potential, (b) suitability for future climate scenarios, (c) environmental friendliness, (d) economic viability, (e) increased productivity, (f) sustainability (f) social acceptability, (g) gender integration, (h) household income, (i) employment opportunity, (j) relevance to vulnerable community, (k) applicability to multiple sectors, (l) seasonal relevance, (m) immediate need, (n) institutional support and (o) expert acceptance. The criteria based evaluation was followed by a selection and prioritization based on (i) effectiveness in reducing key risks, (ii) potential technical as well as costs, social acceptance and manageability, and (iii) current state of implementation and additional requirements

6.4 Extension methods and awareness raising

With the active participation and involvement of the National level and Upazila level working groups, the existing field based extension approaches and methods were used and enriched with climate risk related information to transform the project concepts into concrete field based action. In the absence of farmers field schools in the project region field participatory field demonstrations on farmer's own fields were seen as the most appropriate extension method to introduce, guide and monitor the field testing of selected adaptation options. Field orientation meetings were organized before the start of any field demonstration. Frequent field visits of the research institutes and/or the extension workers to advise farmers, as well as on the spot technical training sessions were held during the implementation cycle of various options. Field days were organized at the end of each season to share the results and learning experiences among the farmers.

Orientation meetings

Field days

Folk songs and dramas

Demonstration rally

Awareness raising

Exchange visits

Awareness raising and communication strategies suitable to inform and transfer climate change-related knowledge and interventions were identified through orientation workshops. Farmers and extension workers and local/district level decision makers were key audiences

of this activity. During the course of orientation workshops, volunteer farmers, farmers groups, local task force were identified to collaborate in pilot experiments, ensuring representative participation by women and women's groups.

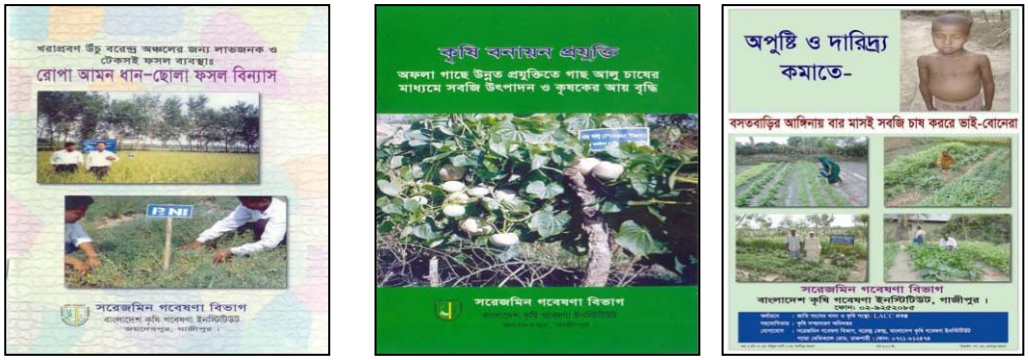


Fig. 10. Publications on viable adaptation practices for awareness rising (Source: BARI, 2006)

The awareness raising strategies included orientation meetings, field days, folk songs and drama plays, demonstration rallies. Also exchange visits to near by villages were organized by the project team for the local facilitation teams. Leaflets and small information bulletins (Fig.8) were prepared by BARI and disseminated during the field demonstrations.

7. PARTICIPATORY FIELD DEMONSTRATIONS OF ADAPTATION OPTIONS

7.1 Implementation processes

Field demonstrations were carried out by the farmer groups during *rabi* 2005, *kharif I & II* 2006, *rabi* 2006, *kharif* I & II 2007, facilitated by Field Monitoring Officers (FMOs) and Upazilla Technical Implementation Working Group members. The list of viable adaptation options was presented to the local farmer groups who have chosen the suitable adaptation options for their localities. Demonstrations were initiated thereafter by the farmers themselves, who had also been identified by the local groups. Where possible, demonstration fields were selected close to a road so that other farmers could visit them. Interestingly poor marginal farmers were selected by the farmer groups. Preparatory works to the extent possible were carried out by the farmers. Farmer-to-farmer learning was motivated through several extension approaches including orientation meetings, field days, folk songs and dramas, demonstration rally, and exchange visits.

Before each season the technical implementation group at national and upazilla level prepared a list of suitable demonstrations and detailed implementation guidelines for each available option. The guidelines contained step-by-step procedures on each demonstration, materials and resources requirements activity table with responsibility. A monitoring sheet has been prepared in consultation with the upazilla level technical implementation groups. The monitoring sheet consists of details on seasons, name of village, list of farmers, date of start, date of sowing/planting, input use (quantity and timing), schedule of operations, cost of cultivation, yield, economics (net profit) and farmers acceptance rating. The monitoring sheets were maintained by Field Monitoring Officers (FMOs) in consultation with the Upazilla Agriculture Officer and in close collaboration with Upazilla level technical implementation working groups.

7.2 Selected good practice samples

The interim results showed that there are many good practices capable of reducing the risks associated with climate change. The good practices were selected based on the feedback from the farmers and acceptance rating for these practices was rather very high.

(1) In farmlands with no irrigation source, rainwater harvesting was done through the mini-ponds for supplemental irrigation. Mini-ponds of 5m x 5m x 2m (length x breadth x depth) size was preferred in small farms. However, some farmers proposed to excavate larger ponds (10m x 10m x 2m) as per requirement. Some preferred to have these mini-ponds in a corner of the field. Adequate awareness about the utility of ponds was provided during demonstrations. The method requires limited family labour and non-climatic benefit include opportunity for growing short duration vegetables along the pond.

(2) *Jujubi* (*Ziziphus jujuba*) was considered as a potential option to existing autonomous mango cultivation. Mango plantation is an autonomous adaptation spreading rapidly. However, the project anticipated that under changing climatic conditions, high temperature induced synchronized maturity may lead to price drop. Further, it threatens to replace rice completely causing food insecurity and aggravate *monga* (seasonal famine conditions). Rice is the only crop grown during monsoon season. Food security of the Barind tract depends on the monsoon season rice. Introduction of *Jujubi* offers scope for diversification, risk reduction at the same time crop is high temperature tolerant, offers less shade effect on the rice crop beneath. Hence rice may not be completely replaced by *Jujubi* cultivation.

(3) Dry seed bed for *T. Aman* rice is one of the preferred adaptation options to mange the risk of delayed on-set of monsoon rains and early season dry spells. Normally farmers wait until the first monsoon shower in June/July to start seedbed activities. If the monsoon rain delays, seedlings will not be available to ensure timely transplanting in July.

Dry seedbed practice with minimal supplemental irrigation helps the farmers to keep the seedlings ready for transplanting immediately after on-set of monsoon rains. This option was suggested by the farmers, but needed some improvement on easy pull out of seedlings with out damage and suitability of the practice for heavy textured soils in the Barind tract. The local research institutions improved the procedure.

(4) Homestead gardening is one of the practices which was already suggested by the Bangladesh Agricultural Research Institute in the early 1980s. However at that stage it was not successful due to non availability of drought resistant vegetables. The current efforts helped to identify the drought resistant vegetable crops involving farmers themselves. This practice ensures year round income, nutritional security, gender involvement. The practice was considered as a better alternative to manage seasonal famine like situations called '*Monga*' in north western Bangladesh. Similarly direct sowing and less water rice cultivation has been successfully demonstrated in the farmers' fields. However, the acceptance right now is low as the water availability.

Box 2. Case study on homestead vegetable production in the Drought Prone High Barind Tract of Bangladesh (BARI, 2007)

BARI has conducted demonstrations in four different locations viz. Nachole, Gomastapur. Porsha and Shapahar during the *kharif-I, kharif-II* and *rabi* seasons of 2006 to intensify the use of homestead spaces for increased vegetable production and to meet the demand of family nutrition. A total of 12 households (three household from each location) were selected mostly from small, marginal and landless group of farmers. Round the year, vegetable patterns were selected for different niches (such as open sunny land) based on farmers options/agreement. Only vegetable seeds and some critical inputs were freely distributed to initiate the program and all other inputs and labors were provided by the farmers.

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The demonstrations revealed that intake of vegetable by farmers increased to a significant level (on the average 136 g/h/day instead of 40 g/h/day), which helped the farmers to meet the demand of vegetables and to reduce the daily expenditure of vegetable purchase. However, the intake was below the recommended daily vegetable consumption (200g/h/day). The yield of vegetable was reduced in rabi 2006 due to serious water crisis/drought and farmers engagement for T.aman rice harvesting and processing. Several farmers used water from mini-ponds to reduce the impact of drought. Farmers also earned a small amount of cash income from vegetable selling after meeting their daily requirement and free distribution among the relatives and neighbors. From house to house enquiry it was found that most of the activities were carried out by women and women used this money for children education and for meeting small needs.

In the homestead/market, new leafy vegetables like Kangkong and Batisak (Chinese cabbage) were introduced. These two crops produced good amount of biomass and are considered “water efficient”. For drought prone areas, high water use efficiency is cucial in order to adapt with local conditions. Moreover, locally adapted stem amaranth (Katora danta, taste sweet)) was also grown, because it also adapted well to low soil moisture and high temperature. Most of the other vegetables were also adapted to Barind conditions, as these were selected after long trials in another area of High Barind Tract (Godagari Upzila of Rajshahi district). It was observed that except land preparation and marketing, most of other works were done by women and children. Thus, it created employment for women, as well as empowerment and a sense of satisfaction, as they had cooperated for the benefit of the family. Moreover, they were consuming fresh, nutritious and poison-free vegetables on a daily basis. Farmers are keeping vegetable seeds for the next year production. However seed production and preservation in high temperature and high humid conditions are a highly technical job, and there is a need for training. In general, quality of seeds in the local markets is very low. For sustainability and up-scaling of the pilot work, continued assistance will be needed including hands-on training, more demonstrations, field days, nutrition education, consumption fares and back-up research.

7.3 Interim achievement and results

More than 225 demonstrations of 15 viable adaptation practices were conducted for 5 seasons (Rabi 2005 to Kharif II 2007) in 4 upazillas of drought prone Barind areas. Among the several adaptation practices, farmers groups considered mini-ponds, growing of Jujubi

(ber), dry seedbed for rice and homestead gardens as the most important adaptation options. In total there were about 36 mini pond demonstrations initiated in four Upazillas, where irrigation facilities through deep tube well was not existent during 2006. The monsoon season during 2006 was a below normal rainfall season and many farmers used the water from mini-ponds for supplemental irrigation. The acceptance rating for various demonstrations and the feedback on each demonstration is presented in Table 2.

Table 2. Preference of livelihood adaptation options by the farmers

Adaptation practice	Seasons	Acceptance	Remarks/reasons
Homestead gardening	All	Very high	Additional household income, employment and nutritional security
Drought tolerant fruit tree gardening	All	Very high	Drought tolerance and crop diversification
Water saving irrigation for rice	*Rabi (boro)*	Low	Controlled irrigation not possible due to non availability of electricity in time
Mini-nursery for fruit trees	All	Very high	Community initiative and income generation
Dry seed bed to manage early dry spell risk	*Karif-II*	Moderate	Lack of technical capacity
Improved stove for household use	All	Very high	Fuel and time saving
Cultivation of non-conventional oilseeds	*Rabi*	Moderate	Pest and disease infestation
Use of compost and organic manures for water conservation	*Karif-II*	Moderate	Inadequate training and long time required for decomposition
Alternative cereals (eg. Maize)	*Kharif-II*	High	Drought tolerance and income stabilization
Rain water harvesting	*Kharif-II*	Very high	Economic benefits and stable income

A detailed summary of all demonstration trails is presented in Annex 1.

Box 3. Economic aspects of selected, prioritized adaptation options

- The adoption of rain water harvesting and supplemental irrigation during drought in Kharif 2006 improved the rice yield by 23% and net profit by 75%.
- Water saving irrigation practice increases the water use efficiency of rice by 20%, but yield and economic advantage is marginal due low cost of water.
- Adoption of improved stove at household level requires an investment of US$ 10/household, while it saves 30% fuel use and reduces 35% time for cooking.

8. LESSONS LEARNED AND CONCLUSIONS

Given the high population density and vulnerability to climate shocks, recent history of famine and past experiences and dependency of agriculture for livelihoods, Bangladesh is further threatened by the impacts of future climate change. Already half of the population live below the upper poverty line (2 122 k cal/day) and a third below the lower poverty line (1 805 kcal/day). Poverty alleviation and ensuring household level food security under changing climate conditions is a major challenge. Ensuring community participation in climate change adaptation, in addition to top down institutional development and policy support is crucial to manage the future risks at community level in general and for the agriculture sector in particular. The key lessons and conclusions drawn from the project implemented by FAO to promote livelihood adaptation to climate change in drought prone areas of Bangladesh are:

Launch adaptation with a focus on current variability and factor in climate change: Where climatic factors are unfavorable and natural disasters strike regularly, livelihoods are increasingly vulnerable, especially due to the inadequate local capacities and limited access to various livelihood assets and or services. Regardless of its underlying causes, climate change is changing disaster risk profiles, environmental and socioeconomic vulnerabilities and induces new environmental hazards that further impact development processes. Impacts caused by altered frequencies and intensities of extreme weather and climate phenomena are very likely to change. However, the experiences of the recent past, current living conditions and natural hazard threats is what prevails in peoples' memory, thus making present natural hazard threats and climate variability the best entry points for community-level interventions, awareness raising and advocacy towards climate change issues. The initiatives of integrating climate change adaptation into the DRM operational frameworks had helped to identify locally relevant adaptation practices for current and future drought risks, and this project demonstrated their availability for possible replication under changing climatic conditions in the future.

Climate adaptation is a social learning process that creates the capacity to cope with climate change related impacts. Since we are not yet able to anticipate exact climate impacts in the future and particularly not at local scale, the project suggests that the intermediate goal of climate change adaptation programmes should be to empower communities to be able to adapt well given the impacts on broader ecosystem perspective. In pursuing this goal, climate adaptation should focus on support for the decision-making and capacity building processes that shape social learning, technology transfer, innovations and development pathways. This process of adaptation needs to explicitly address the needs of marginalized groups that are most vulnerable to the types of climatic and socio-economic changes that are likely under perturbed climates. The social learning process need to identify the best practices through participatory processes for community based adaptation. A key message is that the current uncertainty regarding the precise impacts of climate change should not be used to justify inaction.

Multiple and integrated adaptation measures across sectors are essential: Project findings confirm that climatic conditions and anthropogenic factors mutually reinforce chronic vulnerability to climate variability and natural disasters. Technology, on its own,[4] is at best a partial solution to climate change and technological solutions should be embedded in the relevant social and environmental contexts. The project confirms the need for multiple but integrated pathways across sectors to improve adaptive responses of local communities

[4] Example: *We successfully tested water savings technologies in irrigated rice production. 20 % water savings, same yields. But Farmers tell us they are not going to adopt these practices at present, because water supply for irrigation depends on electricity and there are too frequent electricity failures. The risk for them to loose the crop with less time flexibility for watering - which the techniques imply- is too high. It shows that our improved AG technologies* ***alone*** *are not sufficient*

especially the poorest sectors of the community. Neither an agricultural nor any other single sectoral intervention alone can provide sufficient scope to manage the future anticipated risks expected by climate change. Short-term and long-term adaptive measures in agriculture, linked with clear focus on possible future risks, must be integrated into cross sectoral planning including:

- physical adaptive measures (e.g. link canals, irrigation, storage facilities for retaining water; drainage);
- adjustment of existing agricultural practices to match future anticipated risks (e.g. adjustment of cropping pattern, selection of adapted varieties of crops; diversification of cropping and/or farming systems; better storage of seeds and fodder; dry seed beds; switch to alternative crops; more efficient use of irrigation water on rice paddies; more efficient use of nitrogen application on cultivated fields; improved water management including water harvesting);
- Introducing alternative enterprises/farming systems (e.g. adoption of mango or Jujubi as cash crop, goat rearing and poultry production; pulses as additional crop after monsoon season), more agroforestry
- socio-economic adjustments (livelihood diversification, market facilitation etc.,);
- strengthening of community resilience, including local institutions and self-help capacities;
- strengthening of formal institutional structures and environment;
- policy formulation to catalyze enhancement of adaptive livelihood opportunities;
- awareness creation and advocacy on DRM, linking it with climate change and adaptation issues;

Adaptation to climate change is a location specific issue. There will be no “one fits all” solutions at local level. Decentralized ways of working are needed, within the framework of coherent national policies. Project demonstrations such as mini-ponds show that it is a good adaptation practice for a farmer who is operating on a clayey soil, but not suitable for a farmer who is operating on a sandy soil. Specific attention is required to develop location specific adaptation options to manage future anticipated risks considering bio-physical, socio-economic and socio-cultural factors.

Institutional capacity building and organisational networking with clear definitions of roles and responsibilities are essential: In order to make adaptation work, institutional capacity building and strengthening of organizational networks across all levels and sectors is a basic precondition. Since adaptation (to climate change) is a new field of work, the institutional responsibilities are not yet well defined. When doing so, there will be the need to carefully integrate top-down and bottom-up perspectives and capacities, and to establish ‘functional coordination’ mechanisms between various agency activities, planning, communication, and operations at field level. Furthermore, it will be crucial to better link and factor-in adaptation to other on-going development activities, and to determine clear roles, who should do what in order to make community based adaptation effective. The experiences clearly showed that provision of a comprehensive approach with concrete roles for action is necessary to motivate change in local perceptions and ensuring meaningful interventions through local service providers including government institutions. The project implementation process showed that a lot can actually be achieved if we get the full buy in, and can work though the existing institutions.

Applying a livelihoods perspective is helpful to understand and promote local level adaptation to climate change: Community and household assets are influenced by the institutions, organizations, policies and legislation that shape livelihoods. The institutions and processes operating from the household to the national level and in all spheres, from private to public, determine access to assets, livelihood strategies and vulnerability to climate change. To add climate change adaptation through a livelihood perspective helped

improving the adaptive capacity of farmers by increasing household access to assets and services. The creation of broad awareness of climate variability at grassroots level, through government and non-governmental interventions and the provision of essential support such as information, technology, technical know-how, alternative sources of income and employment, credit facilities, insurance mechanisms, health facilities and information on markets, as well as dissemination of all awareness messages in local language need to become an integral part of the livelihood adaptation process. The livelihood perspective was strengthened by the initial scoping studies and the better understanding of local community perceptions on risks and local coping and adaptation practices.

Need to better promote sustainable natural resource management practices in the context of future risks. The project shows that we can reach pretty far in terms of awareness raising and capacity building for adaptation, if we would succeed first of all in doing better what we already know about sustainable natural resource management and agricultural development. There is already wealth of knowledge on sustainable technologies and innovative methods of technology transfer to manage current risks. Tuning these risk management techniques towards future anticipated risks could address the future risks to a significant extent. By taking this first step we can gain a time window urgently needed to get better. Locally down-scaled predictions of climate change impacts and new location specific adaptation options will then build on what is already practiced by the farmers or existing at the technology transfer mode.

Need to revitalize and strengthen research and development links; The project experience argues in favor of establishing more and better - participatory practical learning and action research and development platforms to jointly develop and replicate with farmers, Departments of Agriculture and international and national research institutions innovative adaptive technologies. Emphasis should be given on demand driven, interactive research based on mutual learning between farmers such as through farmers field schools. project helped to identify the current weaknesses in the institutional set-up, networking and information sharing. The weaknesses had been partially addressed through strengthening existing institution's technical capacity and by promoting new structional coordination and collaboration mechanisms..

There is a need to monitor ongoing adaptation practices, alert on risks of mal-adaptation, and establish links with policy making. Farmers do take action anyway on their own if they can, irrespective of external interventions. It was observed in North West Bangladesh that many land owners started planting Mango trees in their rice fields, mainly for economic gain but also because the mango is well adapted to the increasingly dry conditions . This autonomous adaptation is taking place in an unplanned and uncoordinated manner. However, this is likely to have a negative impact due to shading on the rice crop underneath in 2-3 years time. Once the land is not suitable for rice production, local food production and availability will then go down, the landless laborers will lose their work. This may lead to internal migration in search of employment, which is considered very critical in densely populated areas and towns like they exist in Bangladesh. The project tried to present with *Jujubi* and alternative crop to mango, which would not cause the same loss of rice. In general terms however, it is required to start thinking about such developments and need to give answers to questions such as if we can leave adaptation uncontrolled to the market or should governments be more actively involved in analyzing, testing and promoting good adaptation options, with incentives and regulatory frameworks as necessary to prevent mal adaptations?

Assess the value of indigenous knowledge in the context of managing future risks: There are a lot of valuable local practices and indigenous knowledge among the farmers on drought risk management, but it is necessary to assess the real value of these practices in the context of managing future risks. It is required to better assess and promote their

dissemination and integrate them with value added knowledge which may not be locally available. The project-based experience related to involvement of the local research institutions has provided insight into the whole range of issues related to adaptation to drought and designing management alternatives. There are many "domains" like land use planning, watershed management, plant production, farming systems research, developing drought tolerant varieties and small scale water harvesting practices already in place. It is a good entry point to put the existing knowledge about climate risks and working approaches into the new context of climate change adaptation.

The establishment of an institutional framework through which local adaptation strategies can be reviewed, validated and integrated into the mainstream of resource management, however, is essential to improve the adaptive capacity of community in general and farmers in particular. Precise documentation and monitoring of all coping and adaptation strategies followed by farmers is necessary to provide a basis for the future.

Adaptation practices related to crop diversification and income generation are preferred at community level: The results of field demonstrations confirmed that farmers' acceptance of alternative crop diversification (Mango and Ber) and income generation practices (fruit tree nurseries and homestead gardening) are very high. Similarly, acceptance of drought tolerant rice and pulse production was high due to a higher income level and crop intensification. Water saving rice cultivation was less preferred by farmers in areas where irrigation water was supplied through deep tube wells – requires awareness rising efforts and policy interventions on pricing of water in the future. Adoption of dry seed bed and compost was moderate as adoption of these practices requires substantial training at community level. Adaptation practices involving community actions like mini-nursery were highly preferred, as the practice provided substantial income throughout the year. Without net financial benefits for farmers there seems to be little scope for local adaptation of any new technology at this stage.

Promoting public – private partnerships in climate change adaptation: The vulnerable agricultural systems are facing huge environmental and social challenges, in view of potentially harmful effects of climate change. Corporate Social Responsibility (CSR) is a new concept in NW Bangladesh whereby organisations including private enterpreneurs are taking responsibility vis a vis the society for the impacts of their activities on communities and the environment. This obligation is perceived to go beyond the statutory obligation to comply with legislation. Organizations are voluntarily taking further steps to improve livelihood assets of their local community and society at large. During the initial project phase, the private enterprenuers were engaged in the process of developing adaptation practices that increase resilinece against impacts of climate change and maximise the benefits for overal sustainable development. Awareness has been created among the local seedling producers about the advantage of drought resistant species and the project team facilitated the interaction between Department of Agricultural Extension (DAE), local research institutes and private seed/seedling producers.