

(III) Strengthening Alternate Extension Systems for Capacity Development of Small-Marginal Farmers viz a viz Agricultural Sustainability

Agriculture scenario all over the world is undergoing a rapid change. Proper and timely access to information plays a vital role in coping with the rapid pace of changes. Increased information flow has a positive effect on the agriculture sector. Agriculture is one of the prospective areas which constantly requires the updated information for the social and economic development of the Indian agrarian community. Farmers need information from different sources and often need help to integrate them.

Advice and assistance for farmers to help them improve their methods of production and marketing is conventionally called **Agricultural Extension**. However, agricultural extension should not be seen only in the context of increasing agricultural output. Extension is a part of overall effort to achieve a balanced social and economic development of rural areas. The basic objective of the agricultural extension system is dissemination of useful and practical information relating to agriculture activities mostly focused on improved seeds, fertilizers, farm implements, pesticides, poultry, livestock, etc.

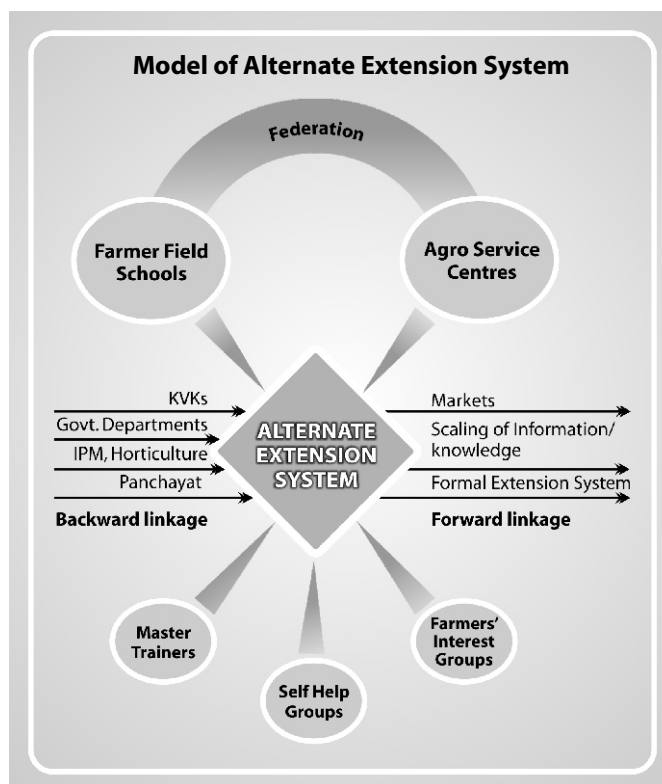
Expert advice to farmers on cropping practices, innovation technology dissemination, crop protection from pests and diseases, market trends and prices of various crops in the markets and also dissemination of information about occupational health facilities, risk covers and provisions of crop and personal insurance. As a result of the increased needs and priorities of small-marginal, landless and women farmers (who constitute more than 90 % of the farming community), the majority of farmers got neglected in such extension support mechanisms. Moreover, as per the FAO figures, women who contribute 8% towards food production receives only 2-10% of the total extension support.

In response to the felt needs of knowledge and information of small, marginal and women farmers, GEAG initiated a knowledge support system at the village level with an approach of **Alternate Extension System**. Each of this extension mechanism is operative for a cluster of 5-6 villages. People from other nearby villages also draw benefits out of this mechanism. It works with the following strategies:

- ◆ The system is small, marginal, landless, woman farmers friendly.
- ◆ Promotion of low external input sustainable agriculture.
- ◆ A platform for sharing agriculture related experiences among farmers.
- ◆ The system bears a problem solving approach. It starts from a practical approach and then develops into a theoretical or basic understanding.
- ◆ The system has linkages with other relevant departments and resource institutions.

The role of various institutions involved vis-a-vis progress made during the year is being summarized in the following paragraphs :

These alternate extension systems are not working merely in the 40 operational villages of Gorakhpur but has now been extended to 10 blocks in Gorakhpur district and the three agro-climatic zones which stands as a successful model today.



(a) Self Help Group

SHGs are organized groups for various activities and they are also actively linked with alternate extension system- as the direct beneficiaries. It is easier to spread the information and knowledge amongst these groups and the members are able to internally discuss the acquired skills. These groups mobilize others also in the village as 'agents of change' and advocate for sustainability of agriculture as well as rights of small-marginal and women farmers.

(b) Farmers Field Schools

Farmer field school is a village based institution, a farmer friendly learning point where issues, problems and information related to agriculture can be shared to a larger group to form a common understanding. A vehicle to help small and marginal farmer to reduce input cost and effectively increase productivity by adopting new techniques. Thus effectively reduce poverty and depression. GEAG adopted the concept of FFS through **learning from the F.A.O and UP-DASP model.**

Details of Farmer Field School

DFID-PACS Porgamme	Sardar Nagar	Campierganj	Purvanchal Sthayee Krishi Manch (network of 10-blocks)	Three Agri- Zones	DST- Biofarm Project
15	06	06	12	11	01

The various problem shared in the FFS during 2007-08 are as following :

Block/Areas	No. of FFS	No. of Problems raised	No. of Problems shared	No. of Participants	
				Male	Female
Campierganj	6	587	587	565	1111
Sardarnagar	6	884	884	474	1258
10 Blocks	12	1347	1311	2740	1597
3 Agri Zones	11	1902	1641	2749	1728
Total	35	4702	4423	6528	5694

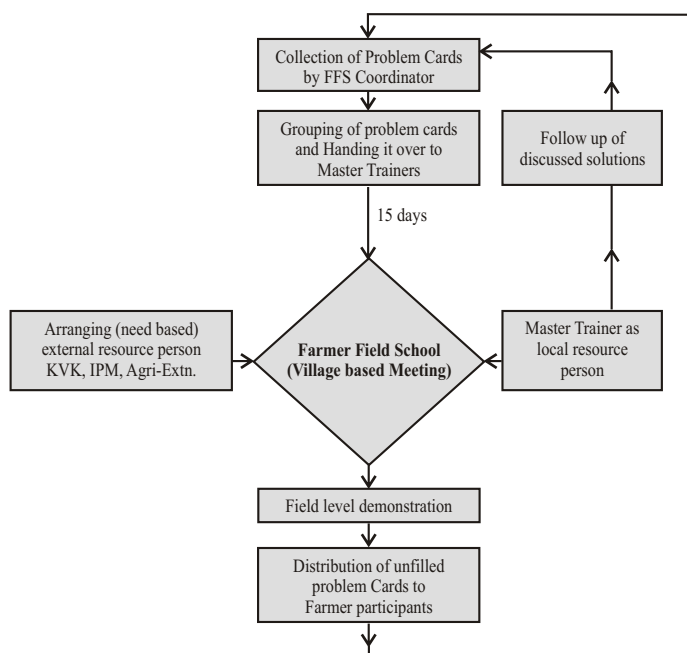
The FFS offers farmers the opportunity to learn by sharing, by being involved in experimentation, discussion and decision making. This strengthens the role of farmers in the researcher- extensions-farmer chain viz a viz develop the sense of ownership of rural communities in technological packages and evolving new knowledge and skills.

The process of the Farmer Field school can be understood from the following diagram :

As explained above, these FFSs are generally coordinated by farmers themselves through mutual sharing exploring solutions, field testing and experimentations etc. Demo farmers and Master trainers regularly help these FFSs. However, quite often the help of outside experts are also sought who provide technical know-how to the farmers. The linked organisations are:

- ◆ *Krishi Vigyan Kendra (an extension outfit of Agriculture University)*
- ◆ *Central Integrated Pest Management, Govt. of India*
- ◆ *Veterinary doctors/Hospitals*
- ◆ *National Seed Corporation*
- ◆ *Govt. Horticulture department*
- ◆ *Soil Conservation Department, Govt. of U.P.*
- ◆ *Seed corporation, etc.*

Process of Farmer Field School



(c) Agro Service Centre

Problems like ever-increasing input cost in agriculture and reducing net gains, excessive use of chemical inputs and non-sustainable methods of farming are the pressing issues for small and marginal farmers. The eco-friendly inputs and solutions of problems-based on local experiences which can ensure agricultural sustainability in small land holding-are not available at conventional extension centers. The small marginal women farmers are also largely neglected in such conventional extension mechanism.

To address these problems of small marginal and women farmers, Agro Service Centers were established for timely availability of quality products consisting of appropriate agricultural Inputs and needed equipments / tools at a relatively cheaper rates / costs.

These ASCs are :

- ◆ Friendly to small-marginal and women farmers.
- ◆ Established at the village level
- ◆ Low cost and eco-friendly agricultural inputs are easily and readily available
- ◆ A centre where small agricultural-implements are available on hire.
- ◆ Centre for dissemination of knowledge and information.
- ◆ Managed and controlled by farmers
- ◆ Financially self-sustainable
- ◆ Cater the nearby villages also.

DFID-PACS program	Sardar Nagar	Campienganj	Purvanchal Sthayee Krishi Manch (network of 10-blocks)	Three Agri Zones	DST-BioFarm project
15	07	07	10	11	01

The Agro Service Centre coordinator, with the cooperation of other farmers carries out seasonal need assessment of various materials and inputs.

Details of Services of ASCs during 2007-08:

Details of Agri. Inputs	Utilization of Agri Inputs in Operational areas	
	40 Villages	10 Blocks
Neem cake Oil	15.5 Quintals	36 Quintals
Wheat Seed	89.16 Quintals	156 Quintals
Paddy Seed	121.22 Quintals	26 Quintals
Oil seed		82 Kg
Vegetable seed	307 Kg	130 Kg
Trychoderma	30 kg	85 Kg
Onion and Garlic Seeds	-	120 Kg
Phosphate solublising and Azotobactor Culture	N.A	27.5 kg (110 packs)

Similarly, agricultural implements and equipments were also made available to farmers from the Agro Service Centers on a relatively cheaper rental rates which can support the poor farmers. The rental rates has been decided by the federation through a public consensus.

Equipments	Users in Operational Areas (No. of farmers)	
	40 Villages	10 Blocks
Irrigation Pipe	2411	541
Spray Machine	25	341
Pump set	93	203
Sprinkler	N.A	156
Land measurement tool	12	N.A

(d) Support Agents for Alternate extension Mechanism

Master Trainers

They are the trained village level personnel functioning as local level resource persons to provide direct technical support to farmers on various agricultural practices (Seed, Bio-pesticides, Composting / Others) to help interested farmers learn and adopt techniques, besides awaring community on sustainable agriculture. Prior to the FFS each Master trainer study the collected problem cards related to his/her subject matter (seed / bio-pesticide / composting /other) containing various farm based problems and prepare accordingly for the session at FFS. After the FFS the master trainer do the follow-up of the inputs told to the farmers at FFS.

A person becomes a master trainers after receiving intensive training in facilitation techniques and communication skills. They are selected by SHGs / Federations according to their background, expertise, keenness to learn and the specific needs of the area. More over, to enhance the skills of Master trainers, GEAG from time to time in collaboration with other agencies arrange capacity building programs and exposures at different levels which in-turn resulted in the following :

- ◆ Most of the master trainers are being utilized under government's agriculture programs (ATMA) / other organizations.
- ◆ Three of the GEAG trained master trainers of Gorakhpur are appointed as Kisan Mitra (block level government agricultural functionaries)
- ◆ More and more local farmers are now accepting master trainers as their resource person on sustainable and low input agriculture, specially the women master trainer.
- ◆ Helped in strengthening relationship of the FFS to various government agencies.
- ◆ Presence of Master Trainers in the village ensures their all time availability and continuous interaction with the community , leading towards increased adoption of sustainable agriculture practices.

Overall picture of Master Trainers in 2007-08.

DFID-PACS program	Sardar Nagar	Campierganj	Purvanchal Sthayee Krishi Manch (network of 10-blocks)
150	08	12	30

Demonstrative Farmers

Model farmers being functional as live demos reflecting various locally and economically viable and practical techniques supporting the soil typology and physical environment. They act as a platform/ resource person and disseminates the techniques and practices through field days and farmer field school.

DFID-PACS program	Sardar Nagar	Campierganj	Purvanchal Sthayee Krishi Manch (network of 10-blocks)	Three Agri Zones	DST- Biofarm project
150	20	20	10	45	15

The demonstrative farmers have played a pivotal role in :

- ◆ Accelerating the agriculture extension education system of their related farmer field schools.
- ◆ Establishing a pre-set platform as live experimental sites to take up future initiatives in the form of methodologies and techniques.

Farmer Interest Groups

As the name suggest very much based on the pattern of SHGs. The basic difference is of the fact that all the members of the Farmer's interest group are involved into a common income generation activity based on agriculture and allied activities. For example- vegetable production , seed production , fishery, poultry, dairy, etc.

(IV) Federating the Process of Development Governance by the People

A village based community level institution, an apex body to federate, control and coordinate all the other institutions of the community viz, Self Help Groups, Farmer Field School, Agro Service Centre, Master Trainers and village level Morcha unit. Federations comprise of members of Institutions (elected SHG, FFS, ASC, MTs,) active members of the village, teachers, members of the PRI, etc.

The basic concept behind forming federations as community based institutions were :-

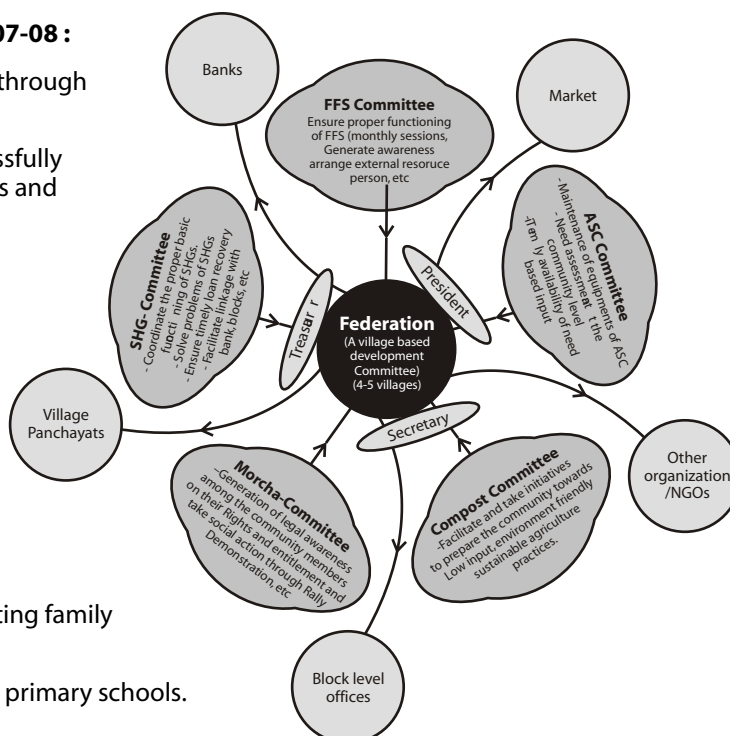
- ◆ To supervise and govern the functioning of established village level institutions.
- ◆ To enable the federations gradually to take over the responsibility of continuing and sustaining the interventions and processes initiated by GEAG.
- ◆ It aims to enhance the leadership qualities of the community so as to make them self-sustainable.

Carrying forward its objectives of strengthening federations, GEAG in the year 2007-08 facilitated to make all the twelve Federations of Sardar nagar and Campierganj blocks self sustainable. During this year, the major thrust was facilitating the process of decision making among the federations by strengthening its committees and making them an action oriented result producing body. As a result, different committees of the federations found to be carrying out their responsibility more efficiently. They are not only monitoring the village level institutions but also guiding and supporting them whenever needed. Federations are independent bodies who takes decision regarding location of ASC and FFS, selection and utilization of master trainers, identifying and inviting outside resource persons, mobilizing resources and financial management.

Total No. of Federations	Total No. of male members	Total No. of Female members
12	30	122

Keeping in mind their sustainability each of the federations have created their own source of income. It can be income generated through common Income generation activities based on the loan given by GEAG to initiate some activity and become financially self sustained. These IGPs can be goatry, jaggery making, seed production, etc. Apart from that income generated through Agro Service Centre, donations and exposure fee also helps a lot to strengthen the federations financially.

Various Committees of federation Roles and Linkages...



Major Achievements of the federations in the year 2007-08 :

- ◆ Removal of illegal possession on pond of gram sabha through pressure development on Sub-Divisional Magistrate.
- ◆ Conducting need assessment on their own and successfully work towards issuance of BPL cards, employment cards and employment availability.
- ◆ Sanitation Campaign in whole village. Besides, played active part in the construction of roads, allotments of houses and toilets under government schemes.
- ◆ Vacation of trespasses from the land of poor woman through creating pressure on police officials.
- ◆ Mass level movement against distillery creating pollution. Also successfully compensated towards crop damages caused by the effluent of saraiya distillery at sardar nagar.
- ◆ Saved two marriages from separation through contacting family court.
- ◆ Ensured quality and proper supply of Mid-Day Meal in primary schools.

(v) Scaling-up of Farm system Model and Alternate Agriculture Extension System in Uttar Pradesh

(a) Engineering Purvanchal Sthayee Krishee Manch (Success Story of 10 -New Blocks)

In order to scale-up its micro and macro learning of its older two blocks (Sardar Nagar and Campierganj) of district Gorakhpur, GEAG has initiated and promoting its interventions from the past three years in ten new blocks of Gorakhpur, through a network of NGOs known as Purvanchal Sthayee Krishi Manch (PSKM) as well as in three Agri Zones of U.P namely Bundelkhand, Ruhel Khand and Vindhya Regions. The objectives of the intervention are as follows :

- ◆ To promote Eco-friendly, low input Sustainable Agriculture techniques in Gorakhpur district as well as in three agricultural zones of U.P.
- ◆ To uplift the small-marginal farmers and women farmers.
- ◆ To reduce poverty and ensure food availability (at least two meals a day)
- ◆ To establish a platform at the district and zonal level where issues of small and marginal farmers can be addressed upon strategically.



The major institutions being functional are Farmer Field Schools, Agro Service Centres and Master trainers. Compared to the older blocks, the model farmers of new areas have just started developing their experimental sites to assist the learning related to Farmer Field Schools.

FFSs during 2007-08

S.N.	Names of the Block	No of FFS	Nos. of problems raised	No. of problems solved	No of Participants	
					Female	Male
1	Brahmpura	1	127	124	150	210
2	Barhalganj	1	218	214	131	326
3	Jangle Kauriya	1	85	81	111	219
4	Bhathat	2	250	248	201	463
5	Pipraich	1	84	82	85	252
6	Uruwa	1	69	66	133	275
7	Pali	1	178	175	70	309
8	Piprauli	1	122	118	76	372
9	Chergawan	2	84	75	484	54
10	Khorabar	1	130	128	156	260
Total		12	1347	1311	1597	2740

Because of the success of existing farmer field schools, other farmers are raising demands to open FFS in their areas, as a result two new farmer field schools (Bhathat and Chergawan) have been established and are functioning smoothly.

Agro Service Centers during 2007-08

Name of the Blocks	No. of ASCs	Distribution of Inputs			Equipments	Users (No. of Farmers)
		Seed	Bio fertilizers	Neem oil cake		
Khorabar, Pali, Bhathat, Chergawan, Brahmpur, Piprauli, Badhalganj, Pipraich, Kaudia, Uruwa	10	203.33 quintals	*148 kg	36 quintals	Spray Machine	341
					Irrigation Pipe	541
					Sprinkler System	156

Major Learning and Success of Intervention

- ◆ The experiences and learning gained in past three years of project duration have developed capacities of partner organizations in the areas of promoting low input sustainable agriculture, community based participatory approach and other viable activities.
- ◆ The adoption of sustainable and low input farming practices and agricultural based income generation activities have improved livelihood of poor small and marginal farmers.
- ◆ Strong linkage and recognition of the village level institutions among the farmers, government departments and other organizations. Resultantly, seven out of 10 blocks are now linked under Government's Agriculture Extension Programme (ATMA).
- ◆ The right based approach have also united and brought these poor, small and marginal farmers under a common umbrella of small and marginal farmer's union. Consequently, they have raised several issues and become successful.
- ◆ Increased capacities and skills of the master trainers. As a result, three of the Master trainers of 10-New Block are appointed as Kisan Mitra, a government functionary of their block. Moreover other master trainers are also utilized on a regular basis among different organizations.

(b) Promoting Sustainable Agriculture Programme in Agro-Climatic Zones of U.P.

Similar to the pattern of the Purvanchal Sthayee Krishi Manch, the agriculture extension programme in three agro climatic zones was initiated for ensuring the sustainable livelihoods of small and marginal farmers through promoting low input eco-friendly farming practices. Also, considering the success and viability of farm system model and alternate agriculture system of our old learning sites- Sardar Nagar and Campierganj, GEAG had taken initiatives to replicate the model in collaboration with three nodel NGOs and their fifteen partner NGOs.

Objectives of the Intervention

- ◆ Adoption of sustainable agriculture and low input farming practices at farmer level through disseminating and promoting these practices.
- ◆ Reduction of agricultural cost by promoting recycling processes, bio-inputs, etc.
- ◆ Promoting efforts for maintaining soil fertility
- ◆ Reduction of poverty through increasing income and reducing agriculture cost.
- ◆ To unionize small and marginal farmers and to provide them information about government policies and schemes, to allow them get the benefits under these policies and schemes.

Target Area

In three agri-climatic zones, Farm System and Alternate Agriculture Extension System had been developed:

Sr no	Region	Nodal NGOs	Interventions
1	Ruhelkhand (Central U.P.)	Vinoba Sewa Ashram, Shahjahanpur (U.P)	Farmer Field schools, Agro Service Centres, Model Farmers, Low input farming techniques and Sustainable agriculture practices, LSKM.
2.	Bundelkhand Region (Dry land areas of south U.P)	Gramonnati Sansthan, Mahoba (U.P)	
3	Vindhya Region (South west U.P)	Gram Swarajya Samiti, Sonebhadra (U.P)	

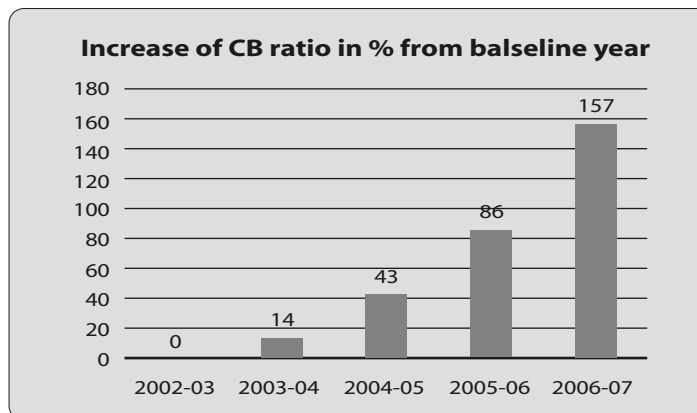
These three agri-climatic zones have their unique characteristics and situations different from GEAG's operational areas. The Vindhya region is known for tribal communities, drought, forest, industries and farmer's suicides. The Bundelkhand region is known for drought, farmer's suicides and Anna Pratha System while Ruhelkhand region is famous for its chemical pollution.

Major Learning and Achievements

- ◆ Development of capacities of the Nodal as well as their Partner NGOs on low input sustainable agriculture practices and participatory development.
- ◆ Promotion of eco-friendly low input techniques and sustainable agriculture and its extension through regional line departments and other NGOs working in the area.
- ◆ Formation of a strong network of like minded NGOs and individuals working in the regions - as actors and advocates of sustainable agriculture practices.
- ◆ Development of increased level of awareness and consciousness towards farmer's issues and rights, government policies, practices, etc.
- ◆ Change in the cropping pattern, increase in the crop intensity as well as system integration.
- ◆ Relatively decreased cases of hunger and poverty specially among the tribals due to increase in income and reduction in input cost.

(vi) Promoting Participatory And Sustainable Farm System Models

One of the GEAG's long term field interventions have brought a remarkable impact. From the last several 06 years the organization has been intensively involved in working with demonstrative farmers in 40 villages of Gorakhpur and has been disseminating the sustainable agricultural practices through farm system models. These 40 villages are learning and experimentation sites of intervention being now promoted/replicated. The development of demo farmers has been innovative efforts in itself for experimenting interventions and reflecting the changes in farming systems under sustainable agriculture approach towards, realization of GEAG's belief behind their developemnt. The promotion of sustainable agriculture and LEISA techniques were approached through participatory farm planning, strengthening recycling processes and increasing bio-diversity at the farm level. This was further enhanced with experiential learning methodology, participatory technology development wherein the farmers themselves were experimenting with their indigenous traditional knowledge and local solutions. Besides, at the farmer level, GEAG continued to adopt problem solving participatory experimentations and farm system analysis approach. Now these farmers have become mature and demonstrating holistic approach of sustainable agriculture. They act as live experimental sites for exposures, trainings and demonstrations.



In the year 2007-08, the focus was more on the research based documentation process which has been given its perfect shape to be served as a strong advocacy tool to justify that how a farmer adopting eco-friendly traditional low input techniques can improve their livelihood decently at the same time learning from it.

During the year, demo farmers were regularly interacted and mutual learning and sharing processes with different resource agencies and district level working groups were facilitated. As per the compiled research reports of the Model farmers-

- ◆ The farmers have reduced their agricultural inputs and market dependency by utilizing their own local resources adopting sustainable agricultural practices.
- ◆ Increase in food sufficiency level through out the year.
- ◆ Decrease in overall input cost while maintaining production level.
- ◆ Considerable decrease in the utilization of chemical inputs. Farmers are now using cheaper, local and ecologically sound non-chemical / organic options, produced at their level.
- ◆ Reduced dependency of farmers on the market forces by maintaining balance between their farm sub systems-farm, livestock and household.

GEAG had also undertaken the development of demonstrative farming models in three agro-ecological zones of U.P. to evolve area-specific strategies and options using locally available resources, knowledge and skill and this work continued in its full swing in the reporting year.

Livelihood Model

Working in diverse challenging situations, has enable GEAG to address the issues of poor and hapless community through promoting interventions based on experimentation. Following below details model are result of GEAG;s innovations.

(a) Landless Model

Landless farmers have been one of the major target groups for GEAG's interventions. Landless farmers are often plagued by poverty as they have no land or poor property. They often lead their lives under depression as they do not have any sustainable sources of income.

GEAG has been always striving to make their livelihoods secure through different ways and means. GEAG has made successful efforts to link this highly, unprivileged section of the community with various programmes and activities help them to sustain their livelihoods. In this context, certain models have been developed under which the landless farmers are linked with various income generating activities, such as, buffalo rearing, goatry, duckery, poultry, vegetable production, marketing on leased land, shared cropping, working as labours, vermi-composting, petty shops, etc.

At present, there are **10 landless models** operating in different villages of Campiorganj and Sardarnagar. Aftern having successful results of initially developed 5 landless models, on the demand of community 5 additional models have been developed. These models are functioning effectively and are helping others to learn from them. Besides their monetary benefit, the model farmers also admitted that by undertaking such activities, their food as well as nutritional security is

also ensured. As a result of the success of their interventions, these models are being replicated by other farmers of the villages.

(b) Flood Resilience Model

Natural disasters always examine people's efficiency of living and survival and always force them to derive a strategy of their own suitable to cope up the situations. After Bangladesh, India is the second major sufferers of the flood related disasters. Eastern Uttar Pradesh is highly prone to floods causing damages to crops, property and loss of human and animal lives. As a matter of fact, one disaster cycle makes the poor more vulnerable to the next and converts a disaster into a disaster process. Since the economy of Uttar Pradesh is primarily based on agricultural produces, floods directly affect the agriculture and causes destruction of rural life. Rural communities particularly those engaged in farming activities suffer more with these situations.

The flood model is an excellent intervention to help farmers learn to mitigate their loss through interventions applying during pre flood, under flood and post flood situations. These interventions are based on sustainable agriculture, low input farming and other techniques like time and space management technique etc. Analysis says remarkable achievement in terms of mitigation of losses through interventions. So far, five flood models have been developed in different villages that are prone to flood disaster and their details of interventions are stated as under-

S.No	Block	Village	Name of Model Farmer	Interventions adopted
01	Campierganj	Thakurnagar	Shambhu Nath Sahani	Paddy cultivation, banana cultivation, duckery, vegetable production adopting Machan technique
02	Campierganj	Gerui Khurd	Sitaram Choudhry	Early variety of paddy, maize, groundnut cultivation, banana cultivation.
03	Khorabar	Jhagaha	Shiv Vachan Yadav	Vegetable cultivation, fruit trees plantation, paddy and green manure cultivation adopting mixed cropping technique.
04	Brahmpur	Tendua Khurd	Ram Bhuwan	Goatry, poultry, early and under water variety of paddy, fishry, duckery, sugar cane cultivation, tree plantation and vegetable growing.
05	Campierganj	Thakur Nagar	Ghanshyam Gupta	Early variety of paddy, fruits, maize, vegetable growing and groundnut cultivations.

