



External evaluation of the Mansehra Food Security Project in Pakistan



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The views and opinions expressed in this report are those of the independent evaluation team and do not necessarily reflect the official views of the Concern Worldwide Pakistan, the implementing partners, CWW project staff, Government of Pakistan, Government of Khyber Pakhtunkhwa.



A portion of water channel rehabilitated by RDP near Alari village, UC Shoal Mazullah, tehsil Balakot



A view of the forest nursery established by HA in Siran Valley, tehsil Mansehra – showing one and two years old plants

Acronyms:

AI	Artificial Insemination
BNF	Beneficiary or Beneficiaries
CO	Community organization
CRM	Complaint Response Mechanism
CWW	Concern worldwide
DAC	Development Assistance Committee
DAP	Di-Ammonium Phosphate
DO	District Officer
DRR	Disaster Risk Reduction
EC	European Commission
EDO	Executive District Officer
EoP	End of the Project
EU	European Union
FSC	Farm Services Centre
GOP	Government of Pakistan
HA	Haashar Association
Ha	Hectare, hectares
HH	Household
INGO	International Non-Governmental Organisation
IP	Implementing Partner
KPK	Khyber Pakhtunkhwa
LOA	Letters of Agreement
MFSC	Model Farm Services Centre
MFSP	Mansehra Food Security Project
MinFA	Ministry of Food and Agriculture
MoU	Memorandum of Understanding
M&E	Monitoring and Evaluation
NBNF	Non – beneficiaries
NDMA	National Disaster Management Authority
NGO	Non-Governmental Organisation
OFWMD	On Farm Water Management Department
PARC	Pakistan Agricultural Research Council
PDMA	Provincial Disaster Management Authority
PKR	Pakistani Rupees
PO	Partner Organization
R&D	Research and Development
RDP	Rural Development Project
TOR	Terms of Reference
UC,	Union council
VO	Village organization
WUA	Water User Associations
WVO	Women Village Organization

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EXECUTIVE SUMMARY

Increase in food prices in 2007-2009 left majority of poor people in rural areas of Pakistan prone to hunger and malnutrition. In response to the crisis of high prices after extensive damages of the massive earthquake in 2005, Concern WW implemented a two-years EC funded "Mansehra Food Security Project" in 2010 and 2011 with an overall goal of reducing the negative effect of high prices on poor and vulnerable agricultural HHs.

Funds provided by EC Food Facility to Concern Worldwide for activities of the Mansehra Food Security Project positively contributed to the development of agriculture in two valleys of Mansehra district, in Khyber Pakhtunkhwa province of Pakistan. Concern's approach of involving partner organizations, local communities and government line departments in planning and implementation is praiseworthy. Collaboration among the different stakeholders had positive effect on capacity building of local NGOs, agriculture extension, agriculture research and the village organizations. The activities funded by EC have improved agricultural productivity and positively affected lives of the poor, most vulnerable, and small land holders in eight UC of mountainous areas of the district. The European people financial support for the project resulted in higher productivity of food crops, vegetables, livestock and poultry: the resultant crops and livestock products not only improved food security of poor small farmers from their own resources, but also increased HH income from sale of some of the surplus products and thus reduced poverty.

The project was properly planned involving relevant stakeholders in the design and implementation of the project. Concern Worldwide implemented the project through two local partner organizations: Rural Development Project (RDP) and Haashar Association (HA). The hard work and dedication of CWW and PO for providing inputs in time to BNF, in difficult to access mountainous terrain and valleys, are really commendable.

As about 95 % or more of the population in the targeted UCs depends on agriculture so the interventions for crops, livestock, poultry, and agriculture related infrastructures were relevant to the needs of the target population for food production and income generation.

CWW/PO provided support in the form of seed and fertilizers to 14,259 HH for wheat, maize and potato to increase food crops production, and to 7396 HH for French bean, pea and tomato for commercial vegetable production to increase farm income. The end-line study reported 100 % increase in yield of wheat and maize and about 4 to 5 times increase in yield of potato. Small quantities of the seeds of other vegetables were given to 3039 HH for kitchen gardening on 50 to 125 m² to improve nutrition. It is encouraging that 75% of the sampled beneficiaries are now practicing kitchen gardening as compared to 45% in the past. The vegetables were mostly used for home consumption; the kitchen gardening by BNF is providing vegetables for home consumption for about 5 months.

A total of 14146 poultry birds were distributed to 2616 HH mostly for the benefits of women. The poultry are producing 60 to 80 eggs per month, 50% of the eggs are sold giving roughly 500 PKR to the BNF HHs. Other interventions for seed production plots and seed banks for availability of seed locally, trials for crop production diversity, tunnel gardening, compost making, irrigation water availability, disaster risk reduction and

linkages with government departments and services were included in the project design and implemented.

The targeted BNF had greater food availability from enhanced crops, vegetables, poultry and livestock production as a result of better access to quality agricultural inputs and improved crop and livestock management practices. The project BNF have diversified the cropping pattern as a result of introduction of new crops and increased agriculture productivity through improved land, soil and water management. The target village groups have established linkages with relevant government agencies, enhanced access to extension services, farm services centres and markets.

Distribution of good quality seeds and fertilizers for wheat and maize crops were relevant and appropriate except some minor problems reported by BNF for maize variety Azam and a problem of poor germination of French bean in year two. Concern should test seed lots supplied after procurement in order to avoid germination problems in farmers fields in future. Interventions for potato cultivation were pertinent to increased HH income. Seed distribution for kitchen gardens provided additional nutritional benefits to the households. The provision of poultry not only improved HH nutrition but gave extra income to women. The support provided by CWW /PO has been well received, and was much appreciated by BNF

It can be concluded that project design and the interventions that improved crop production activities were relevant to the food security needs and poverty alleviation of the target vulnerable groups, and that in the absence of the support, some vulnerable farmers, in the two valleys would have faced acute food shortages and would have been prone to partial starvation and malnutrition because the small farmers could not buy the quality inputs for crop production. CWW revitalization of agriculture and related interventions were very effective and had great impact on food availability and reducing hunger and malnutrition of the targeted population.

The inputs for other crops especially, French beans, peas, tomatoes, and vegetables for kitchen gardening were also relevant to the nutritional and cash needs of the poor rural households. The seed quality and varieties of crops and vegetables were generally appropriate. The actual need assessments in the target areas revealed that the original packages for half acre of cereal crops and commercial vegetables were not appropriate. Concern modified the inputs packages for crops and vegetables to target BNF having land in the range of 0.125 to 0.5 acres: This shows concern's adoptability attitude according to the needs of groups to be targeted.

The project achieved the objectives of food security and poverty alleviation. CWW spent 24 million rupees on seed and fertilizers purchases for maize and wheat given to 12361 HH to plant wheat and maize on 1323 ha which produce extra yield worth 50 million rupees. CWW support for about 4.28 kanals of maize and wheat produced 527 kg grains which was enough for a family of 7.6 for 9 months. Thus the project inputs for maize and wheat increased food security of the BNF on the average by about 4.5 months.

Benefits of good quality seeds spillover to NBNF and will be sustainable for the coming years. Irrigation facilities will provide improved access to water for many years to come. The newly introduced crops, such as beans, potato, and the vegetable may also provide the targeted communities with a new source of income and nutrition

beyond the project period. Similarly, poultry distributions may have a long term effect, particularly for the women recipients. Tunnels for off-season vegetable production were very successful at the mid and lower elevations, their benefit will be sustainable as BNF obtained high income from small area and some NBF replicated the tunnels using local low cost materials.

Building the capacities of the communities, linkages with agriculture extension and farm services centers will provide more sustainable benefits to the rural agricultural communities. Interaction with the EDO Agriculture, DO extension, and DO Livestock; farmers visits, trainings and village organizations role in project implementation had a very positive effect on the development of agriculture and on the targeted BNF in the 8 UCs.

The project has achieved the goal of food security and poverty reduction of the BNF in the target areas of the two valleys and the project invigorated the agricultural livelihood activities of the affected communities. The effective use of local NGOs is praiseworthy. The project had been well designed and there were no major operational weaknesses in the project implementations.

It is concluded that grain crops, vegetables, livestock, and poultry productivity increased due to enhanced availability of quality agriculture inputs, better management practices and access to local extension services as well as markets. Enhanced food production resulted in greater food availability and more diversity of the food consumption of the participating households from own land resources. Thus, by the end of the project, there was considerable improvement in food security situation of the BNF households which is an indicator of the overall goal of reducing the adverse effect of high food prices on poor communities in the targeted UCs.

Lesson learned from the project implementation are: 1) the package for crop inputs should be based on land holding and the capacity of HH to use; 2) Inputs for distribution must be tested for quality, especially all the seed must be tested for viability by performing germination test; the seed must be true to type and true to variety: the variety must have good performance based on prior proper experimental evidence and should have value for cultivation and use.

Recommendations:

1. The line department and partner organizations were of the opinion that the project should be replicated remote areas of Mansehra and in other districts like Kohistan, Shangla, Swat, Bunir, and/or Chatral.
2. In future projects of similar nature, demonstration plots and quantitative data collection should be properly planned for developing extension messages to convey the benefits of interventions to other potential users.

1. Introduction/background information

Majority of people in rural areas of Mansehra district of Pakistan were prone to hunger and malnutrition due to increase in food and other commodities prices in 2007-2009 coupled with earlier greater damages by 2005 earthquake to their houses, fields, infrastructures, livelihood resources, and equipments. Agriculture is the main livelihood activity of the major proportion of the population of Mansehra district. The inflation in the

country consumed greater resources of rural masses for food and other requirements leaving the poor farmers with little resources for carrying agriculture livelihood activities in an efficient way to produce enough food for the HH members. Majority of the households were becoming poorer with passage of time. In response to the high prices, Concern Worldwide implemented a two-years European Commission funded project "Mansehra Food Security Project" in eight worst earthquake affected union councils of Mansehra with an overall goal of reducing negative effect of high prices on poor and vulnerable rural agricultural HHs.

The project objectives were to increase the food security, income, and standards of living of poor and vulnerable communities through improved access to agricultural inputs, better farm management practices, diversified and increased crop production, better management of agriculture related natural resource, and enhanced access to local extension services and markets.

Concern Worldwide implemented MFSP through two local NGOs as partners; Rural Development Project (RDP) was the implementing partner for the project in four union councils of Balakot area and Haashar Association (HA) was the implementing partner in four union councils of Siran valley. HA worked in Bhogar Mang, Jabbar Devli, Jabori, and Sachan Kalan union councils of Siran valley in tehsil¹ Mansehra and RDP worked in Shoal Mazullah, Ghari Habibullah, Talhata and Karnal union councils in lower Kaghan valley of tehsil Balakot.

Project timeframe was November 1 to October 31 and project duration was two years. The project budget was 1,472,899 Euro, 90 % from EC and 10 % from CWW own resources. The key results that the project achieved were:

1. Target groups have greater food availability due to enhanced crop and livestock production as a result of improved access to quality agricultural inputs and better management practices.
2. Target groups have diversified and increased crop production through improved land, soil and water management.
3. Target groups have strengthened linkages with relevant government agencies and enhanced access to local extension services and markets.

More details of the project achievements are given in project Log frame (annexure - 7) and in Tables 1 to 3 (Section 3.1, Concern Worldwide Response)

2. Evaluation methodology

The overall purpose of the evaluation was to assess the degree to which the 'Project' met the objectives as outlined in the project proposal/log frame (annexure 7), with particular emphasis on the DAC criteria for evaluation, which are; relevance and

¹ The Tehsil is the second-lowest tier of local government in Pakistan; each Tehsil is part of a larger District and is subdivided into a number of Union Councils.

appropriateness, efficiency and timeliness, effectiveness, impact, and sustainability of the interventions carried out. One of the aims of the evaluation was to extract the lessons learned from the project design and implementation to enhance the quality of on-going and future programmes by Concern and its Partners. Another aim of the evaluation was to formulate recommendations for improvement of future programme design and implementation and for sustainability.

The evaluation was scheduled in Jan-Feb 2012 after the end of the project. The evaluation methodology was consultative and participatory involving meetings with different relevant organization collectively and with individuals, focus group discussion and field observation. Documents and reports review was also a major source of information for the evaluation.

The evaluation team composed of a team leader having expertise in agriculture, an agriculture extension expert, and two female agriculture graduates. The team leader reviewed the project log frame and developed questions for the different stakeholders to collect information for evaluation. The team leader had a meeting with relevant CWW staff and the staff members of the two partner organizations, RDP and HA, at the Concern's provincial office in Abbottabad. The team leader had a brief review of the relevant documents received from CWW office in Abbottabad and updated the check list of potential questions for different stakeholders and for the focus group discussion with village organizations and beneficiaries. The potential questions for collecting information from different stakeholders are given in Annexure-6, data collection tools.

For the field visits, team randomly selected four UC, two in each valley where the MFSP had been implemented; convenient samples of villages were selected in each UC. Full team visited the selected project areas to see the results of interventions and to have focus group discussions with the village organizations, beneficiaries, and village elders in the field visits. Before the focus group discussion, the team used to thank them in advance and explained the purpose of the visit. The two male members of the team collected information about the project interventions from male village organizations and beneficiaries and the two female members of the team collected information about poultry and vegetables seeds distribution for kitchen gardening from women beneficiaries.

The team members held a number of individual and group interviews and discussion with male and female beneficiaries, non-beneficiaries, and village elders in the project areas. The team gave high importance to consultations with stakeholders like village elders, BNF, members of VO, government line department staff, PO project staff, and CWW relevant persons to collect information on achievements, impact and difficulties faced. The evaluation covered DAC evaluation criteria such as relevance, efficiency, effectiveness, impact and sustainability. Efforts were made to collect information on not only what happened but also the reasons for what happened or why something worked and others did not, so as to learn lessons for future project design and implementation.

During the visits to the project areas, in addition to focused group discussion and interviews, the team gave due attention to field observations especially of the crops, kitchen vegetable gardens, tunnels, tree plantation, orchards and nurseries as well as infrastructures. The purpose of field observation was to see if BNF and other farmers are using the improved seeds and balanced fertilizers, and have adopted improved practices; if the BNF especially the women are growing vegetable in kitchen gardens or fields; if the poultry BNF still have the birds distributed by the project and observe the kind and features of the poultry; if BNF are maintaining orchards and growing nurseries. The team visited the tunnels for vegetable gardening, observed the working and use of the tunnels and had discussion with BNF of the tunnels. The team had discussion with BNF who received de-wormers, and whose livestock were vaccinated. The team visited the veterinary business shops and had discussion with those AI trained persons who received training under the project. The team also visited forested area, spurs, roads, walking tracts, protection walls, and irrigation channels. The team members were also looking at the shops in remote small groups of houses, villages and towns to see the sale of agriculture related products and agriculture inputs. The base line study was a major source of pre project information and end-line study report was a good source of project results and the impact of project intervention on HH and community. The concern staff at regional office in Abbottabad and some staff of the PO provided some details to team for economic analysis and calculation of monetary benefits.

The process of evaluation was not without limitations. Majority of farmers and VO either forgot the quantity, quality and timings of the inputs they received or were mixing the inputs with those from other projects by PO/CWW and sometime with inputs distributed by other NGOs. The team found the executive body of the village organizations were very vocal and generally used to tell that everything was fine and okay.

After field visits, the team compiled field notes and had a detailed review of the project documents and reports. The team analyzed and triangulated the information from field notes, inputs from BNF, responses from different stakeholders, details of the interventions, results of the project end-line study and various reports. A draft report of the evaluation of the MSFP was written and submitted to Concern for feedback. The important findings of the evaluation were presented in debriefing session at CWW office in Islamabad. The evaluation report was finalized in the light of feedback and comments on draft as well as feedback from debriefing.

3. Findings of the evaluation

3.1 Concern Worldwide Response

The 1998 census reported total population of Mansehra district was 1152839 and it was projected to be 1606187 for the year 2010. Major proportion of human population of district Mansehra lives in rural areas: the 1998 census showed that 94.7 % of the population lived in rural areas (ERRA, 2007). Agriculture is the main livelihood activity of majority of the population living in the rural areas of the district. One of the most important natural resources for agriculture is land. Arable land holding is small in most villages of the two valleys where the MFSP was implemented; the base line study (Farman, 2010) showed that average land holding in the project area was 4.18 kanals² with a range of 0.82 kanal in Ghari Habibullah to 6.5 kanals in Talhatta. Though irrigated area as percent of cultivated area in Mansehra district is about 20 %, only about 13 % of farm land in the project area has irrigation facilities (Farman, 2007), and thus major proportion of cropped area in the eight selected UCs depends upon rainfall which is less than the requirement for pumper crops and the rainfall is also erratic. The dry land agriculture in the project areas is one of the causes of low productivity.

The total geographical area of Mansehra district is 457900 and reported area was 439000 ha in 2007-08. Greater proportion of the reported area, about 75 % was under forest and only 18.45 % of the reported area was under cultivation. The total cultivated area in Mansehra district was about 81,000 ha in 2007-08; but only 19.75 % of the area had irrigation facilities, the rest of the area about 80 % was under dry land agriculture depending upon rainfall. In Mansehra district, major proportion of the cropped area (about 89 %) was devoted to the two food grain crops, maize (60 %) and wheat (29 %), followed by tobacco and rice (Figure 1); other crops were grown on much less area. As not much tobacco is grown in the eight union councils of MFSP, the proportion of area devoted to the bread crops may be much higher in the villages where MFSP was implemented. The cropping pattern in Mansehra depend on elevation: Areas having altitude between 1000 to 1500 m above sea level is double cropped and mostly maize – wheat cropping pattern is followed (Figure 2); areas having altitude between 1500 to 1800 m above sea level cannot be used for double cropping, in these areas wheat is green cut for stall feeding of livestock and maize is then grown for grain purpose; areas having altitude between 1800 to 2000 m above sea level is single cropped with maize; and areas above 2000 m is having self-reseeding pastures which are used for grazing by the community livestock herds in summer months. The single cropping in parts of the valleys where MFSP was implemented is one of the reasons for low food production and poverty (KP Bureau of Statistics 2011).

Before turning to evaluation of MFSP using the DAC criteria, it is pertinent to discuss the food habits and components of food security in Pakistan. Food security is briefly define as availability of sufficient, safe and balanced food, according to the food habits of the communities, at all times to all people at reasonable rate and at convenient place.

² Kanal is measure of land, there are 8 kanals in an acre and about in a hectare. Kanal is equal to about 500 m²

A thorough definition of the food security was developed by UN, but for us the above simple one is sufficient.

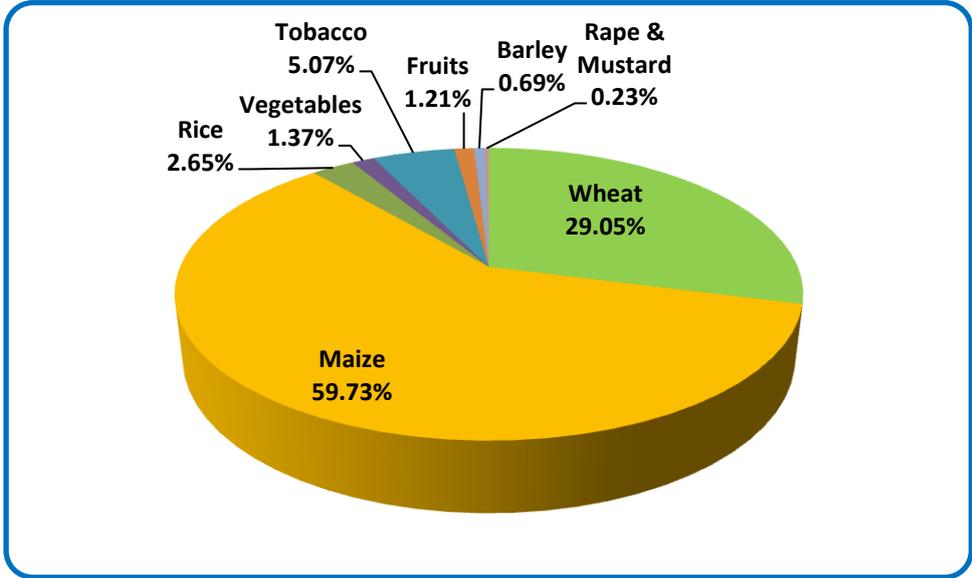


Figure 1. Per cent area devoted to different crops in Mansehra district in 2007-08.

Majority of the population in Pakistan eat bread with curry in lunch and dinner; curry dishes are usually made from vegetables, meat plus vegetables, or pulses (Figure 2). In some areas, dairy products like yogurt or butter milk are also taken in dinner and lunch along with bread and curry. In some paddy growing areas, rice is eaten once or twice a day. Tea with milk and *parata*³ are generally taken for breakfast.

Pakistani nation as a whole is generally bread eater, so availability of bread or availability of wheat and maize for bread making is a sign of food security, though in some limited areas availability of rice is needed for food security. Livestock and poultry products are also needed for a balanced diet to fulfill the nutritional requirements for healthy life. Vegetables, grain legumes whole or split (pulses or *dals*), meat, and potatoes are used to make various types of Pakistani dishes. In mountainous areas of Mansehra and other maize growing area, maize bread is eaten in lunch and dinner mostly with butter milk (called *lassi* or *shomlee*) and cooked leafy vegetable like spinach; such cooked dishes are locally call *sag* – these three simple food items are very much relished by people in rural maize growing areas. Green tops of some plants like rape seed and mustard, turnip and broccoli as well as leaves of other plants (cultivated and wild) are also cooked as *sag*.

³ *Parata* is flat wheat bread roasted in butter-oil known as *desi ghee* or hydrogenated vegetable oil known as *bazari ghee*

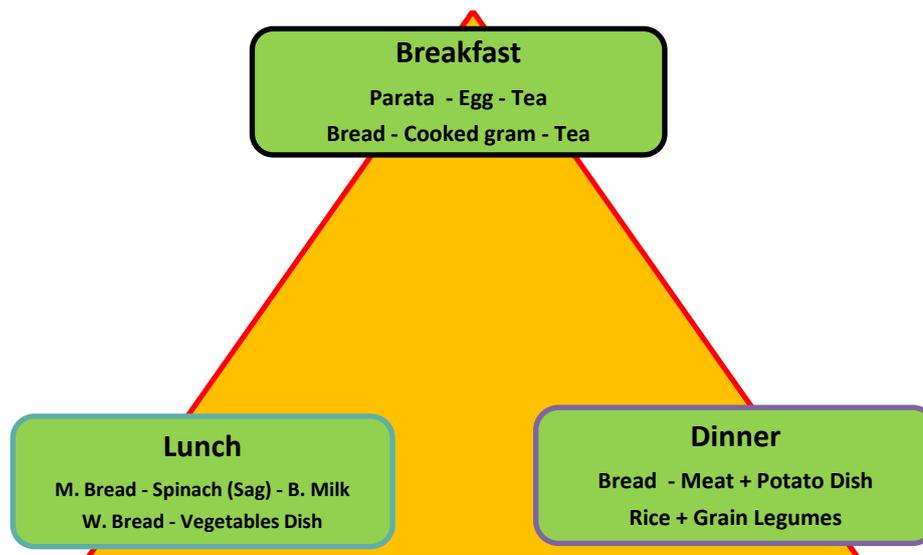


Figure 2. Breakfast, lunch and dinner habits of peoples in rural areas of Pakistan. (M. Bread is maize bread, B. Milk is butter milk, and W. Bread is wheat bread)

The components of food security are the items used for lunch, dinner and breakfast; they are food grain crops used for bread making like wheat and maize; paddy crop from which clean rice is obtained; grain legumes and vegetables used for preparing various dishes; and milk, eggs, meat and fruits for proper nutrition. For food security there is an urgent need to increase production of grain crops like wheat and maize; other field crops like rice, potato, grain legumes, edible oil seeds and various types of vegetables. For balanced diet and proper nutrition, it is also important to increase meat production, dairy and poultry products. Generally, MSFP addressed improvement of all the items that are needed for food security through various types of interventions.

In MFSP, the concern and its partner organizations addressed the food security issue by the different interventions for increasing crop and livestock productivity; the details of different types of interventions under the MFSP are given in Tables 1 to 3.

Major focus of the project interventions was helping farming communities in the selected mountainous areas to increase efficiency of crop and livestock production systems. The overall goal was food security and poverty reduction of the vulnerable HHs so that they have the required quantity of nutritious food and money from their own resources for health care, children education and general well being because the earthquake in 2005 and then high price trends of the basic essentials after 2007-08 made the rural communities prone to hunger and malnutrition as well as economically too cripple to have proper health care and to send their children to school. The project helped the vulnerable HHs in increasing food production from their meager land holding and the landless HHs and women in efficient poultry production.

Table 1. Details of the crops and vegetables interventions in Balakot and Siran by CWW, HA, and RDP for improving crops productivity per unit area and per HH.

Intervention	HH #	Per Household		Total area sown	
		Package size	Area in Kanals	Kanals	Ha
Maize seed and fertilizers	8212	Seed 6 - 12.5 kg DAP & Urea 25 – 50 kg	2 to 4	19560	878
Wheat seed and fertilizers	4149	Seed 12.5 -- 25 kg DAP & Urea 25 – 50 kg	2 to 4	8900	445
Potato seed and Fertilizers	1898	Seed 100 -- 400 kg DAP & Urea P 2.2 – 50 kg	1 to 4	2000	100
French Bean seed and Fertilizers	2926	Seed 1 – 4 kg NPK 6.2 – 25 kg	1 to 4	2600	130
Pea seed and fertilizers	2176	Seed 10 – 40 kg NPK 6.2 – 25 kg	1 to 4	1700	85
Tomato seed and fertilizers	2294	Seed 50 – 200 g NPK 25 – 100 kg	1 to 4	1600	80
Vegetable seed for kitchen garden	3039	Seed of okra, spinach, pumpkin, radish and turnip for 0.1 kanal	0.1	304	15.4

Table 2. Details of livestock and poultry interventions in Balakot area and Siran valley by CWW, HA, and RDP for improving poultry and livestock productivity of the beneficiaries.

Intervention	Number of HH	Package/ HH	Total birds distributed
Poultry distribution	1366 in 2010 <u>1250 in 2011</u> 2616 total	6 birds in 2010 5 birds in 2011	8196 <u>6250</u> 14446
De-worming/ vaccination of livestock	4 days in 2010 <u>4 days in 2011</u> 8 days in total	59355 animals <u>45885 animals</u> 105240 animals	10,935 HH ⁴

Table 3. List of other interventions implemented by CWW/HA/RDP under the MFSP

⁴ Total number of HH that benefitted from animal health care was calculated as total animals treated divided by average livestock owned by HH i.e. 3.406 divided by 2 year and 2 seasons with the assumption that de-worming and /or vaccination were done each year and biyearly in spring before going to pastures and in autumn after pasture as suggested by DO livestock. See Farman (2010) base line survey page 26 for number of animals and number of HH sampled from which number of animals per HH was calculated [996/327= 3.406]

Conducted 34 community-based certified seed production demonstration plots
Established 8 community-based seed banks as facilities for local availability of good quality seed of improved varieties of different crops
Conducted 27 crop management trainings in which 948 farmers were trained on improved crops management practices
Trained 856 farmers on composting skills and techniques, and constructed 30 on site demonstration compost pits.
Arranged 2 artificial insemination training. Trained 16 community-based artificial inseminators and they are operating in the target areas for breed improvement
Constructed 20 plastic tunnels for off-season vegetables gardening at the farm level and used them as demonstration tunnels for vegetable growing
Established 28 orchards on privately owned farm land
Conducted 59 trials on alternate crops/crop rotations
Established 20 forest plants nurseries which are successfully operating
Conducted campaigns for forestation/re-forestation of 257 hectares of eroded soil/land and degraded area. In this campaign 305,350 plants were planted
Treated 181 hectares with soil and water conservation measures, stone check dams
Constructed 8 water conservation and management infrastructure
About 60 hectares of arable land brought under irrigation by rehabilitating water courses
Constructed four water ponds for livestock
Arranged 8 trainings to train 200 people in soil and water conservation infrastructure operation and maintenance
A total of 240 village groups (120 male VO and 120 female VO) were strengthened and linked with government FSC
Twenty agriculture field days were held for dissemination of best practices, off-season vegetable production in plastic tunnels and lessons learnt through field trials and research work
Seven exchange visits for farmers were facilitated
Four local agricultural fairs were held
Constructed 27 market access roads/trails

Cropping zones and main cropping patterns/calendars followed in Mansehra

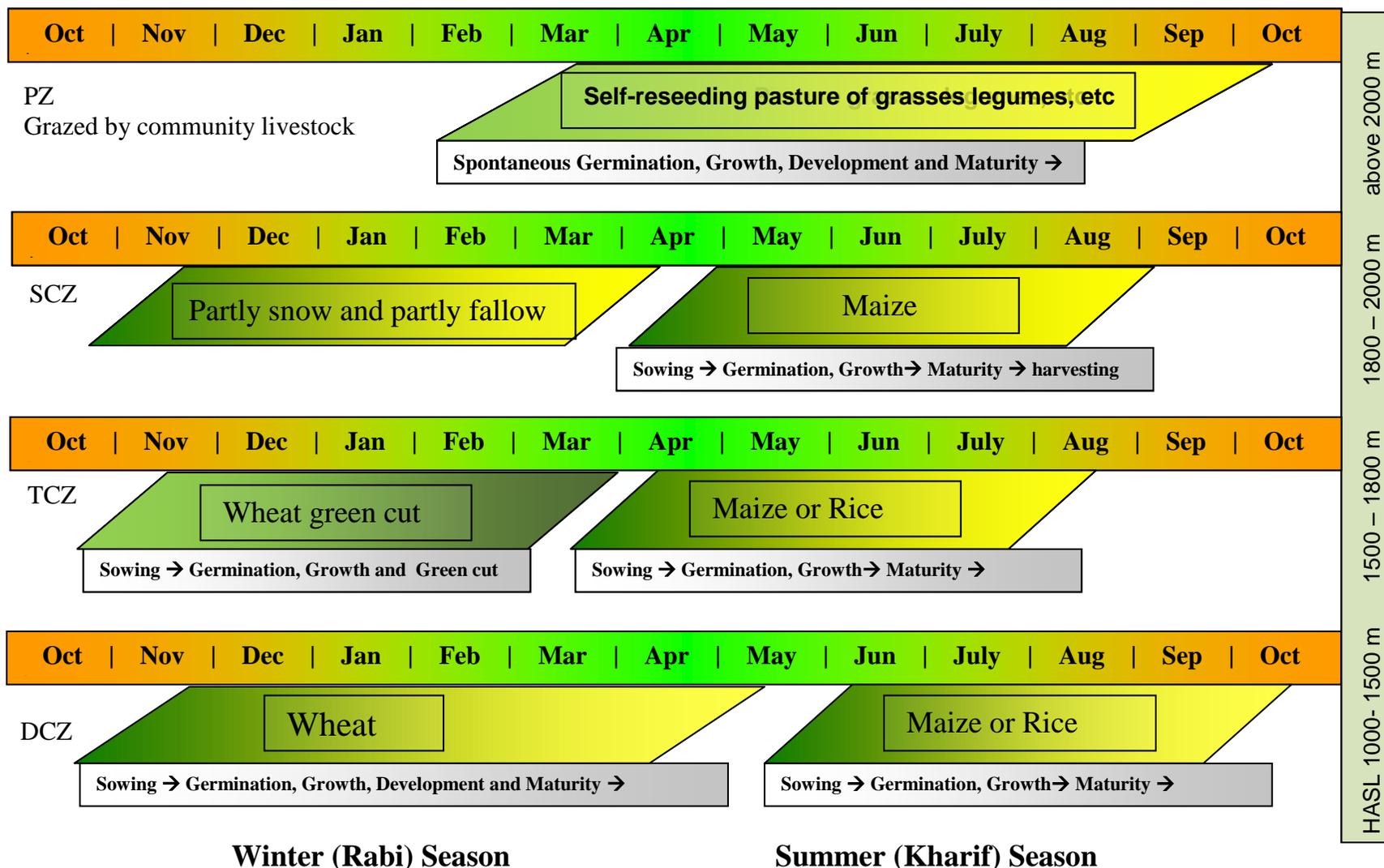


Figure 2. Different cropping zones in mountainous areas of Mansehra district and the main cropping pattern followed in the zones. DCZ is Double Cropping Zone, TCZ is Transition Cropping Zone, SCZ is Single Cropping Zone, PZ is Pasture Zone. HASL is height above sea level

3.2 Relevance

Generally, almost all the interventions of the MFSP were relevant as the communities in the targeted UCs had a real need for all of them to develop agriculture livelihood and produce food and cash crops for normal life, CWW and its two partner organizations, Haashar Association and Rural Development Project, did a good job of project planning and implementation for the overall goal of food security and poverty alleviation.

Despite some of the project sites being extremely inaccessible and despite planning for a lot of interventions, the achievements of the results by CWW and its partner organizations, the Haashar Association and Rural Development Project – are commendable.

The project design and the project interventions were much relevant to the basic food needs of poor vulnerable rural population in Pakistani situation and in relation to Pakistan poverty reduction strategy. The goal of MFSP and implemented interventions are in line with Concern' Pakistan Strategic Plan, which aims to increase agriculture production and access to adequate quantities of quality food. The interventions are also in line with the European Commission's Pakistan Country Strategy that focuses on poverty reduction and food security and Pakistan's Millennium Development Goals of eradicating extreme poverty and hunger

Due to price hike in 2007 to 2009, the small farmers could not buy good quality seed of improved varieties of maize, wheat, other crops and vegetables as well as fertilizers. Quality seed of improved varieties and fertilizers are important inputs for obtaining higher crop production, and thus provision of good quality seed of improved varieties and fertilizers by the PO of CWW under the MFSP was most relevant to enhance production of food and cash crops and to achieve the objectives of food security and poverty alleviation. In Pakistan, majority of small farmers devote more area to food crops and in some areas small land holders devote more areas to vegetables to make a living because more income is generated from vegetable production. Provision of fertilizers and quality seed of improved varieties of maize and wheat, the two major food grain crops was relevant and appropriate for enhancing production of crops used to make bread. Similarly, provision of fertilizers and quality seed of improved varieties of potato, French bean, pea, and tomato as vegetables and cash crops were relevant and appropriate for increasing production of these crops. The enhanced production of these vegetable on semi-commercial scale was used by the HHs for themselves, their relatives, friends and neighbors which improved their nutrition; the surplus production was sold generating income ranging from 5,000 to 7,000 PKR in villages at lower altitudes but much less vegetable were sold by HH living at higher altitudes. Provision of small quantities of seed of other vegetables for kitchen gardening was also relevant for enhancing vegetables production for HH use.

Fertilizers are needed for production of bumper crop and increase in yield per unit area. Optimum rates of fertilizers are needed for crop production, as lower rates of fertilizers do not fulfill the nutrients requirements of the crop plants and result in lower

yield; on the other side, greater than the required amounts is wastage of resources and creates pollution problems. Agriculture scientists have formulated recommendations for different types of fertilizers for most of the crops grown in different areas of Pakistan; these recommendations have been formulated on the basis of results of extensive on-station and on-farm trials. The fertilizer packages for the different crops though relevant were not in some cases appropriate. The fertilizers rates in the project proposal were a little on the higher side for maize and wheat production under rain-fed conditions; the quantity of N was a little higher as soils in mountainous areas have higher organic matters, greater proportion of land (about 87 % of the cultivated area according to base line study) has no irrigation facility and crops are generally produced under rain-fed condition. Another fact to support the fact presented in the previous statement is that the dose of fertilizers for the seed production plots was almost half of the rate of fertilizers given to farmers for general production of maize and wheat crops (document provided by CWW, Abbottabad). Nitrogen in the N-P-K fertilizer (grade 10-15-15, according to one of the documents supplied by CWW) may be considered low to optimum for peas and French beans, which are legumes, but these legume crops need more phosphorus or DAP⁵. Symbiosis of the legume plants with proper *Rhizobium specie* can fix atmospheric nitrogen and these crops need less quantity of nitrogen/urea. There is a lesson to be learned for future; package for fertilizers interventions for the different crops should be based on recommendations by researchers and crop specialists, water availability, soil fertility, and expected yield; these recommendations are usually published in technical bulletins written by crop specialists and soil scientists.

For sustainable production and availability of quality seeds of crops, the partner organizations established 20 community-based certified seed production demonstration plots and 8 seed banks in the eight UCs of the MFSP. For sustainability of seed production, sale, private business of local good quality seed of crops and vegetables and for inculcating the habit of on-farm seed production, the seed production plots and the seed banks were very relevant to the needs of the community because the provision of seeds by the different NGOs after the earthquake had made the farmers more dependent on free seed distribution. After the earthquake in 2005, the farmers generally did not produce and keep seed for the next year planting. However, the team was told that seed banks are not very successful at lower altitudes and near the big towns and cities; the seed banks are comparatively more successful at higher altitudes and in inaccessible areas.

Training of farmers on improved crops and vegetable productions practices, soil conservation measures and composting skills/techniques were also relevant to the needs of the farming communities to acquaint farmers with modern concepts of crop production, and proper disposal of dung/urine, stall cleanings, house cleaning, forage refuses, and trash. Though majority of the farmers knew the crop husbandry practices for traditional main and minor crops, they were ignorant regarding the importance of the

⁵ If 25 kg NPK was given for ½ acre of peas, and F. beans as indicated in some documents, it is equal to 50 kg NPK per acre and that supplied only 5 kg N, 7.5 kg P₂O₅, 7.5 kg K₂O to per acre; low rates of N and especially P.

usage of certified seed and balanced fertilizers in order to obtain greater production and higher farm income. The farmers also needed training on the new crops introduced to diversify the cropping patterns. Generally, the farmers have little or no knowledge of the production technology for new crops and needed more detailed training on production technology; date, rate and method of sowing; manures and fertilizers doses, maturity indicators, and threshing, as well as drying, usage, and marketing of the products: So training was needed for introduction of new crops in the cropping pattern in areas where the farmers are growing only grain crops. More importantly they also needed to be informed that they need to buy hybrid seed each season. The trainings must be done by most competent persons/crop specialists in agriculture research and/or agriculture extension systems and only interested relevant persons must be selected as participants for the training. The training enhanced the knowledge of farming communities for integrated crop management which is required for increasing farm productivity and farm income with minimum of agrochemicals. It was given in the project document that the project will support the key stakeholders in the development of training manuals and other materials for agricultural training in local languages; however, the team did not get any such material.

Water is important input for obtaining higher crop production: Crops planted under dry-land agriculture depend on rainfall and produce much less yield than crops grown under irrigation. Completion of schemes for rehabilitation of water channels was a real need of the farmers of the project areas. This intervention was most relevant for the enhancing crop productivity to achieve food security of the HH with small holding as was the case in the area targeted by the project.

The inputs for other crops especially, French beans, peas, tomatoes, and vegetables for kitchen garden were also relevant to the nutritional and cash needs of the poor rural households. The seed quality and varieties of crops and vegetables were generally appropriate, however, the original packages for 2 to 4 kanals for cereal crops, potato, and commercial vegetables were not appropriate as many members of the farming communities had smaller land holding and the sizes of the different packages were later on reduced. Thus small farmers having low land holding were targeted by giving fertilizers and seeds of maize, wheat, potatoes, tomato, peas, and French beans for 1 to 4 kanals: A good decision by CWW to reduce the package and target more HH and small land owners. Similarly, very small farmers were given seeds of different vegetables for about 50 to 100 m² (2 to 5 marlas), thus for kitchen gardening very small farmers were targeted.

Poultry is mostly owned by women. Improved breeds of poultry were the real need of the household women for nutritional needs of the HH members and for the daily income mostly owned and used by women. The female BNF response to the female members of the evaluation team was always a very strong statement of relevance of poultry distribution. In terms of egg production the cross bred poultry birds, from the cross of Rhode Island Red/ Golden breed and the Egyptian Fayoumi breed, were more appropriated than the local mixed poultry birds: The cross-bred poultry produced more eggs and the eggs of the cross-bred birds were also bigger in size than local breeds.

One of the observations of the team regarding the poultry birds is relevant to the appropriateness. The team was told that Concern/PO distributed cross bred poultry birds (RIR x Fayoumi). The team observed that the birds distributed were not uniform in color, though they should be if they are F1 or first generation cross of two pure breeds. Some birds were golden like RIR, others were some like Fayoumi, but there were some pure white and other colours.

As many HH (about 94 %, Farman, 2010) own one or more than one type of livestock types, artificial insemination interventions for breed improvement and de-worming/vaccination interventions for health improvement of animals were really needed in the target areas, which were not even visited by the DO livestock according to his statement given to the evaluation team. The training provided to persons for provision of artificial insemination and animal health care were relevant to the needs of the communities. The trained AI technicians were providing the services and the BNF reported that after a week of reduction in milk production following vaccination or de-worming, they noted increase in milk production and reduction in diseases attack. The CWW provided kits and 80 doses of semen of improved breeds of buffaloes (Neli-Ravi and Kundi) and bulls (Sahiwal and Friesian) were also more appropriate for breed improvement. The de-wormer was recommended by DO livestock and thus was more appropriate for cleaning the stomachs of animals from the parasites.

The vegetable tunnels constructed by CWW/RDP were relevant for growing off-season vegetables and for increasing farm income from a very limited area. The other interventions directly and indirectly improved and protected the natural resources and were needed for the development of agriculture in the project areas

The CWW interventions for alternate crop like mung-bean and mash by RDP in lower Kaghan valley were also relevant as these crops were needed to improve the nutritional intake of the rural masses; mung and mash are called poor man meat because of high content of easily digestible proteins in their seeds. Mung-bean and mash are grain legumes crops and they are used to prepare very nutritious dishes called *dal* in the subcontinent [hence a proverb 'I invite you to have *dal-sag* with me' is usually used to offer something to guests not formally invited]

The BNF communities expressed high degree of satisfaction with seeds and fertilizers provision for enhancing crop and vegetable production in the targeted villages. However, the failure of the second year French bean seed distribution by PO reduced the interest of farmers in bean production and damaged the reputation of the PO and probably of CWW. There was some problem of mixtures in some lots of maize though germination was not bad. In some area Azam variety grew better but was attacked by ear-worm and in other areas smut disease was noted, thus some BNF were not satisfied with the seed of Azam variety. In one area at higher altitudes some BNF told that their local variety produced more yield than Azam distributed under MFSP; this may be due to short growing period at very high altitudes, due to slow rate of development as a result of low temperature and accumulated heat units, or better adaptability of local ecotypes as a result of years of natural selection under the climatic conditions – all favoring local land races as compared to Azam developed by breeders at CCRI in

Peshawar valley. These problems with maize seed have a lesson for PO and other involved in seed distribution; be careful with procurement of seed of cross pollinated crops. A major problem of very low germination, very thin field emergence, and crop failure occurred in case of the seed of French beans distributed in the second year, i.e. in 2011. The seed purchase order for the same variety of the same company was placed with a different supplier than the first year. The packing and the name of the variety was the same but the seed failed in the BNF fields. The supplier was blacklisted, but this problem damaged the reputation of the respective PO. Some BNF farmers had save some seed form the last year produce and thus they were advised to replant the fields with their own seed. There is a lesson for aid workers in this case and that is that NGOs must conduct germination tests of the various lots of bulk seed supplied after procurement order.

It can be concluded that project design and the interventions that improved crop production activities were relevant to the food security needs and poverty alleviation of the target vulnerable groups, and that in the absence of the support, some vulnerable farmers, in the two valleys would have faced acute food shortages and would have been prone to partial starvation and malnutrition.

The project design included disaster risk reduction aspects and interventions for the DRR were implemented in the two valleys. Theoretically, the intervention should reduce the risk of disasters like soil erosion, land sliding, agriculture land destruction by flash and river floods, houses risk of being washed away, etc. Catchment drains were made to collect and convey the excessive rain water to safe out lets and prevent damages to houses and fields. Drought is a kind of disaster and water channel rehabilitation will reduce the deleterious effect of drought on crop production, stabilizing production over the years, especially maintain the crop production in years of below average rainfall. The vaccination/de-worming is also a DRR approach, reducing death rate in endemic area.

Though not much quantitative data on poverty reduction was collected for the end-line study report, there are indications that the increased crop production harvested by BNF did reduce poverty; the increase in maize and wheat production quality seed and fertilizers distribution did help directly and indirectly in reduction of poverty and debts. The partial sale of commercial vegetables, off-season vegetables production in the plastic tunnels, and potato production increased the income of the BNF and helped in poverty reduction. Other interventions like poultry distribution and provision of seed for kitchen gardening did reduce poverty of the women as they earned money from sale of eggs, and saved money that would have been spent on purchase of vegetables in the absence of fresh vegetables form kitchen gardens and on purchase of eggs in the absence of improved breed of poultry. Other interventions like the introduction of alternate crops, livestock health care, growing of nurseries and seed production did increase BNF earning as well as saving due to reduction in expenditure on purchase of milk and milk products, and pulses.

3.3 Efficiency

CWW involved the PO, farming communities, and government departments from the project inception till the end of project. The different stakeholders were involved in implementation of the project in an efficient way. The project achieved the objectives of food security and poverty alleviation.

The financial and human resources of the project, the transportation and office facilities of the CWW and PO, and the experience, time and capability of the project staff contributed to the achievement of expected results. The use of project resources improved access to quality inputs and increased knowledge of best farming practices which improved crops, vegetables, livestock, and poultry productivity and thus achieved the overall goals of food security. Economic analysis of wheat package using method of CIMMYT (1988) is relevant to show monetary benefit of wheat package. The cost of seed and fertilizers package for one acre of wheat was about 9,600 PKR for BNF (about 7350 PKR more than NBNF expenditure of 2250 PKR on seed and fertilizers) which produced 984 kg per acre of gain yield and 1476 kg per acre of wheat straw giving benefit of rupees 29520 (15120 rupees more than NBNF benefit of rupees 14440). Thus the expenditure on use of good quality seed of improved varieties of wheat along with fertilizers had marginal rate of return (MRR) of 206 %, which means that for each 100 rupees expenditure on seed and fertilizers the BNF got his own 100 rupees and 106 rupees more. Thus the value for money was achieved much more; the details of the economic analysis are given in Annexure 8.

Regarding 'the value for money achieved', some calculations of the amount of money spent by CWW on inputs for wheat and maize and the value of increased production are relevant. Roughly, CWW spent about 24 million rupees on seed and fertilizers purchases for maize and wheat given to 12361 HH to plant wheat and maize on 1323 ha which produced extra yield (production per ha more than the NBNF or previous year yield) worth 50 million rupees. Thus, surely two times value for money was achieved for maize and wheat interventions in the two-years time frame of project, there is possibility of the spillover effects of good quality seed for 2 to 3 years beyond the end of project and may be some residual effect of the DAP applied to maize and wheat; some other interventions like the those for potato and tomato may have greater monetary returns.

The project provided seed and fertilizers for maize, wheat and potato to 14249 HH and the inputs increased yield and production, and improved food security of the BNF. The end-line study report of the project showed almost 100 % increase in yield of maize and wheat in the targeted area (CWW, End-line study 2012). Much greater increase in yield of the potato crop was reported. The project interventions for commercial production of selected vegetables improved yield and vegetables production of beans, peas and tomato crops of BNF; the produce of these crops not only improved the BNF nutrition and income but the BNF neighbors, friends and relatives were also benefited

from the cultivation of these vegetables especially at higher altitudes far from town markets.

The CWW project and the partner organizations staff were sufficient and competent. The arrangement of CWW provincial office working with local partner organizations and those in turn working with VO organizations and BNF was overall well managed. The project enhanced the capacity of Concern staff, the RDP staff, the HA staff, the members of 120 Male-VO and the members 120 Women-VO (at least in theory). According to the PO staff, the financial system of MFSP worked smoothly and had no problem; the concern staff did not mention any problem in financial system of the project. The physical, environmental, political, economical, social, and security risks were properly assessed and the mitigation measures for the risk were identified in the project document

Timeliness

The season needed inputs for crop production like seeds and fertilizers were delivered in time and the crops had been planted on time as the BNF did not indicate any delay on part of RDP or HA for seed and fertilizers for maize, wheat and other crops. The timely sowing of the crops and vegetables did increase production which in turn improved the effectiveness of the intervention and impact of the project. Due to delayed start of the project, wheat seed and fertilizers could not be distributed in time for the 2009-10 wheat growing season, so the project distributed seed and fertilizers for 2010-11 and 2011-12 wheat growing seasons. The team visited some wheat fields of the BNF of wheat package distributed for the 2011-12 wheat growing season. The wheat crop at seedling stage was good; hopefully, the crop will produce better than average yield. However as the project has ended before the crop was planted, nothing will be reported about the performance of the inputs distributed for the 2011-12 wheat crop. Timing of the inputs distribution and timing of crop, livestock, and agriculture related interventions is important; 4 Ws, who, what, where and when, will affect the achievements of objective, aims and goal; thus future projects must be formulated, approved, and implemented in time.

3.4 Effectiveness

Table given in Annexure – 9 shows the degree to which the project achieved the targets. The targets set for the different interventions were generally achieved: in majority of the cases the achievements were more than the targets, however, in some case the achievements were less than the targets. Regarding interventions for crops and vegetables production, more than 100 per cent targets were achieved for number of HH to be provided seed and fertilizers packages for maize, wheat, beans, peas, tomato, and kitchen garden vegetables. The project approach was effective in helping the BNF to improve their crop and livestock productivity and partly overcome the negative effect of inflation. Except for maize and vegetables for kitchen gardening where more than 100 of targets for total area have been achieved, the targets for area on which the crop

production was supposed to be improved by providing inputs from the project funds for Rabi⁶ and Kharif⁷ crops have not been achieved which could be due limited holding of the HH and/or inflation in the country. The project distributed inputs for planting wheat, maize and potato on 1423 ha against the original target of 1560 ha; the target and achievement indicates that 91 % of the targets were achieved for area of the three important food crops; though the area targets achieved had a range for the different crops. Similarly, the project distributed inputs for planting vegetables on semi-commercial scale and kitchen gardens on 449 ha against the original target of 483 ha, thus 93 % of the targets were achieved for the vegetables. The achievement of less than 100 % targets for crops and vegetables area may be partly because of the reduction in proposed area to be supported per HH as the land holding in the targeted UCs is small, and project wanted to support more HH in some crops. Hundred or more than 100 % targets for 18 out of 20 other interventions have been achieved, these fact show greater effectiveness on part of CWW and its implementing partners.

The overall objective of MFSP was increasing crop and livestock production to achieve the goal of food security and poverty reduction of the targeted communities. The distribution of crop production inputs by RDP and HA was effective for achieving the aim of food security because the distribution of quality inputs enhanced productivity of Rabi (winter) and Kharif (summer) crops.

The team observed good germination, dark green seedlings and perfect stand of healthy wheat crop in fields where RDP and HA distributed seed had been planted in November 2011 and fertilizers used. Though one cannot predict what happens in future, the good condition of crop in the fields show that the resulting crop will produce good yield of wheat if weather conditions are favourable.

The end-line study gave estimated yield of 123 kg per kanal of maize and wheat as compared to about 60 kg yield per kanal before the project. In focus group discussion during field visits to some of the villages, BNF revealed that seed and fertilizers inputs from MFSP increased yield of maize and wheat by 75 to 100%. Thus good quality seed of improved varieties of maize and wheat along with fertilizers for the two macro-nutrients were highly effective in increasing the yield of the grain crops. Increased production of maize and wheat due to good quality seed and fertilizers from MFSP as revealed by the end-line study must have improved the food security situation of the BNF for longer periods and thus these interventions were effective in achieving the objective of food security of the rural communities in the targeted UCs. On the average BNF production from 4.28 kanals of maize and wheat was 527 kg grains which was enough for a family of 7.6 (4 adults and 3.6 children equivalent to 5.8 adults) for 9

⁶ Rabi is a local term used for crops planted in autumn, they grow in winter and harvested in spring. An English equivalent word will be winter. The word Rabi can be used for season, too: Rabi season mean winter season.

⁷ Kharif is a local term used for crops planted in spring and harvested in summer or autumn. Kharif crops are warm season crops and damaged by frost. Kharif is also used for season; kharif season is warm-season.

months using 10 kg per capita per month requirement of wheat as recommended by PARC. Thus the project inputs for maize and wheat increased food security of the BNF on the average by about 4.5 months when compared to NBNF or food security before the project.

Poultry distribution was very much appreciated by the women. The discussion with female BNF reveal that the improved breeds of poultry produced much more eggs than their local mixed breeds. The eggs of improved poultry breeds were bigger than the eggs of local poultry. DO livestock told that the improved cross bred poultry distributed by RDP and HA lay more eggs than local poultry, however, the cross bred birds do not sit on eggs for hatching. Each cross bred poultry bird lays 200 to 300 eggs per year as compared to 50-80 eggs per year produced by local types of poultry birds. The end-line study also reported greater egg production, about 70 eggs per month by birds of improved breeds and the HH sold more than half of the eggs generating 480 PKR per month. BNF told that de-worming and vaccination of livestock by the project trained persons increased milk production, improved health of the livestock, and reduced death rate. The DO livestock said that de-worming increased the daily milk production by 2 kg per day and the de-worming resulted in early maturity and greater weight gain.

The results of alternate crops trials are encouraging; the alternate crops give more income than opportunity income of maize. Economic returns were calculated from yield of French beans in trials conducted during 2010 in Siran valley; the monetary return from beans was calculated as rupees 11,920 (average of 5 trials), as compared to return of 5,525 rupees as opportunity income calculated from the yield data of local maize; however, the yield of Azam variety was reported to be higher than local maize varieties, hence the gap between income from French beans and income from improved variety of maize would have been narrow. Two points must be elaborated to have an unbiased comparison of maize and F. beans: one -- the data for improved variety of maize would have been better for the comparison; two -- the costs of production of the two crops, the value of maize stover as feed for livestock, the fertility benefits of the French beans as it is legume and marketing problem especially of the produce from higher elevations must be considered to compare food and economic benefits of these two or other crops.

The project approach involving local NGOs that had previous experience of working in the mountainous areas of Mansehra, government line department with technical expertise, and the VO with knowledge of the village HH, local agriculture practices and livestock problems – in planning and implementation of the project was very effective. The blend of knowledge, experience and the art of locality specific practicalities of the different stakeholders for quick identification of the would be problems during implementation and solution under the local context was an appropriate approach. The implementers made suitable changes during implementation like reducing the crop production packages and increasing the number of HH. The BNF which were mostly the members of the VO participated in the need assessment/identification, BNF selection, and actual implementation phase of the different interventions. The line departments, EDO agriculture, DO agriculture extension, DO livestock, relevant staff of agriculture

research stations, tehsil level Agriculture Officer and union council levels Field Assistants were all involved in project activities.

Regarding M&E system and quality of monitoring, the evaluation team found that though there was no M&E officer post in the project on Concern side and in the PO side, the CWW staff had monitoring visits at regular interval and they used to have regular review and planning sessions after the visit to assess that the project activities had been carried out as planned according to crops seasonal calendars and according to the timing for other interventions, and to propose solutions to problems encountered during implementation. Thus the monitoring system was planned in a way that Concern's Programme Manager and Programme Officer used to have weekly and monthly monitoring visits to the field and discuss the matters related to monitoring and proper implementation in meetings with the two local implementing partner NGOs, and senior management team after the field visit.

The end-line study showed increased diversity of food intake of the communities targeted by the project; the BNF HHs were taking more maize, wheat, potatoes, vegetables, eggs, and milk. The study showed that 47% of the households were consuming maize on daily basis by the end of MFSP project as compared to 42% before the project; the highest improvement in daily maize consumption was reported for Balakot valley (58% by the end of project as compared to 15 % in the past). One of the reasons for the increased maize consumption was greater production of maize due to good quality seed of improved variety and balanced fertilizers provided by MFSP. The report also mention greater percentages of HH consuming other crop products like wheat, rice and pulses but no data is given for the consumption prior to project or for NBF. The end-line report gave that 99 % of the HH (100 % in Siran valley) were consuming milk on daily basis as compared to 95.72% HH prior to project (base-line survey); showing an increase of about 3 % with project interventions. Almost all the respondents of the end line study reported 69% decrease in the incidence of livestock diseases in the project area as a result of project implementation. Analysis of food intake showed that by the end of the project, 46 % of the sampled HH consumed eggs daily as compared to 35 % of the sampled HH using eggs daily prior to the project (base-line survey). About 79 % of the BNF consumed vegetables daily as compared to 22% in the past. Seventy five per cent of the BNF reported that they were practicing kitchen gardening as compared to 54 % in the past; and almost all kitchen gardeners (98%) were consuming the vegetables they produced. The BNF told that the improved variety of beans produced more yield and 55 % of the BNF are growing French beans as they produce more yield; they also stated that French bean production is a good source of income as compared to traditional maize and wheat crops.

The results of the end-line study and group discussions with the different stakeholders revealed that interventions for increasing crops and vegetables yield and production, livestock health and productivity improvement, poultry ownership by women, crop diversification and water schemes did achieve their objectives improving food security of the targeted communities.

3.5 Impact

The overall impact of the project was development of the traditional agriculture of the target areas into modern agriculture using best varieties of crops, improved livestock breeds, good cross-bred poultry and best production practices base on scientific experimentation. Majority of the BNF obtained higher yields of maize, wheat, potato, beans, peas and tomato which improve the HH food security and the HH got financial benefits by selling some of the surplus potato, beans, and peas. The food security situation of the participating households has improved as BNF have food security for 7 to 9 months form wheat and maize intervention as compared to food security for 4 to 5 months of NBNF or of BNF before the project⁸; this improvement is an indicator of the achievement of the goal of the project and according the expectation of the project impact.

The tunnels for off-season vegetables had great impact on income of the tunnel BNF as they reported annual income in the range of 50,000 to 60,000 PKR in addition to their own HH use of the vegetables. Introduction of tunnels for offseason vegetables had great impact on the income of BNF especially in lower Kaghan valley as the agriculture of farmers on both sides of river Kunhar is much developed than other areas. The seasonal calendar for vegetables with particular reference to their production using plastic tunnels and returns to BNF supplied by RDP show that one BNF obtained on the average 19,900 rupees from spring and summer vegetables, another BNF obtained 5,600 rupees form summer cucurbits, another obtained 130,000 from offseason autumn vegetables, while the 4th BNF obtained 17,000 rupees form winter vegetables; all the BNF were form Balakot tehsil. Project Director for off-season vegetable project stationed at Hazara Research Station in Abbottabad was of the opinion that there is great scope for offseason vegetable production without tunnels at higher altitudes and with plastic tunnels at mid to lower altitudes; he told the team that one farmer earned 30,000 rupees from selling cucumbers grown in plastic tunnel to a local shopkeeper. The off-season expert told a success story of tunnel gardening, though outside Mansehra district: a farmer in Haripur district obtained monitory benefit of 5,35,171 rupees per acre form tomato hybrid (Fonto) planted in November.

Regarding targeting, the project addressed the food security, income and well being of the three types of HH. The crop inputs were given to the poor and vulnerable HH having less land (1 to 4 kanals). The poultry were given to women headed HH and some very poor landless HH. The BNF for seed demonstration plots, tunnels, and orchards were average and comparatively large farmers. Beneficiary targeting criteria were developed in consultation with community/village organizations. There are more⁹ HH in the 120 villages of the 8 UCs of the project than the number the project could

⁸ This was calculated from the yield improvement of BNF who received maize and wheat crops inputs and the PARC per capita consumption of 10 kg per month. The yield increase of BNF over NBNF or last year yield of BNF was reported by the end of the project report and by the BNF in focus group discussion

⁹ The base line survey reported on the average 213 HH per village; thus there are an estimated 120 x 213 = 25560 HH in the 120 villages of the project target area.

support; thus, logically, HH to be supported must be very carefully chosen so that the real poor, vulnerable and needy are supported and not missed. Though in a few cases, some members did raise the issue of selection of BNF in focus group discussion, the members of VO did not complain about targeting, this is because one of the criteria was membership of the VO in Siran valley. The evaluation team found that some members of the executive body of the VO received more than one type of intervention; the president of one VO always said that he received the package in response to questions by the team that who received wheat seed? Who got maize seed? Who got beans seed? Who got poultry? and so on. This shows equitability problem in targeting and distribution of inputs. The evaluation team noted that one of the BNF criteria for crops/kitchen garden was 'member of VO', which excludes non-members. The target BNF for off-season vegetable tunnels, seed demonstration plots, seed banks, orchards, and farmers visits were average and large farmers.

The direct BNF are those who received inputs like seed and fertilizers for crops, vegetables, and demonstration plots; poultry birds; material for tunnels, seed bank, compost pits, nurseries, and orchards; cash for work and those who got training. The other direct BNF are the farmers whose fields are in the command area of the water channels rehabilitated by MFSP, they get water for irrigating their fields and crops from the water channels. Other direct BNF are those whose livestock were vaccinated, dewormed and artificially inseminated. CWW and PO, employees of the MFSP project, trainers and suppliers of the inputs for project are also direct BNF. The indirect BNF are farmers who obtained seeds from the seed banks, those who got seed of improved varieties or eggs of improved poultry breeds from BNF. There are other who are and will be benefited from the infrastructures like protection wall, spurs, roads, and trails and from forestation and reforestation.

The project has helped to improve the living standards of the members of BNF households. The HH are now more food secure. The HH food intake has become more diverse as a result of increase in vegetable production and purchase of more diverse type of food items from markets/ village shops made possible by greater income as a result of crops and livestock interventions of MFSP. The poultry BNF HHs are now using more eggs as compared to the use before poultry distribution. The female HH members are better-off having efficient poultry breeds than before the project.

MFSP contributed to the first and most important millennium development goal of poverty and hunger eradication. Eradication of extreme poverty and hunger of the rural people of the targeted valleys was the direct focus of the project. The project also contributed, though indirectly, to the other millennium development goals like promotion of gender equality and women empowerment, reduction of child mortality, improving maternal health, and insuring environmental sustainability. The social mobilization and creation of WVO contributed to women empowerment. Poultry distribution targeting mostly women was a right attempt to promote gender equality and so was distribution of vegetables seeds for kitchen gardening. Diversification of crop grown, improving livestock productivity through better health care, improving poultry productivity through distribution of improved breeds resulted in diversification of food intake involving

vegetables, beans, eggs, milk and milk products indirectly improved maternal and children health and thus helped in reducing child mortality. Some of the project interventions will, in the long run, conserve natural resources and reduce environmental degradation. Forestation, land stabilization, erosion reduction measures will lead to environmental sustainability, which is also one of the millennium development goals. Crop physiologists have calculated that an average crop growing in a field daily cleans air up to 550 m above the crop as it fixes carbon from CO₂ of the air that diffuses in the minute pore called stomata. The crop plants like trees, using the common process of photosynthesis, release oxygen in exchange for CO₂ (though the O₂ is coming from splitting of water molecule and not CO₂); the replenishment of oxygen is more important for human beings and their livestock, because we cannot survive beyond a couple of minutes without oxygen. These environmental benefits are often ignored as most people, even the educated and learned person, do not know the environmental benefits of increasing crop production.

The linkages of VO and their members to FSC, the agriculture extension department, agriculture research stations, livestock department, and forestry department; acquaintance with agriculture inputs supplier and companies through agriculture fairs, training, and field visits are likely to increase efficiency and production of agriculture sector.

Distribution of fertilizers and good quality seed of improved varieties of main grain crops, commercial vegetables and kitchen garden vegetables increased the yield and production of the crops and vegetables: the increased production of grains and vegetables along with increased productivity of livestock and poultry products due to project interventions not only improved food situation of BNF from own farm land in line with global food security objectives but the new crop introductions by MFSP along with greater supply of dairy products and more eggs production through project efforts improved nutrition and food intake of BNFs.

The poor vulnerable groups having small holding and living in remote high elevation inaccessible areas were empowered through social mobilization and were supported by giving them good quality inputs to enhance crops, vegetables, livestock and poultry products. The project interventions had positive impact on food security, income generation and nutrition of the extremely poor marginalized groups in the targeted mountainous areas of Kaghan and Siran valleys in Mansehra district.

The unintended wide effects have been generally positive but some not so positive effect may occur which could be reduced or illuminated. The positive intended effects, as stated in the rest of the report, are increase in crop and livestock productivity, greater food security and reduction in poverty. The other positive indirect effects are improvement in standards of living, health improvement of the household members especially the children, both male and female, and women, reduction in school drop off, etc. However, some unintended wide effects may be negative. Potato is a clean cultivated crop planted on ridges and the soil is heaped around the base of plants for tuber formation and good yield; this may induce more erosion in the hilly terrains and

terraces in the step hilly areas. It could be illuminated if the ridges are made along the contours at right angle to the slope, in which case more rain water may be retained benefiting the growing crop. Some of the vegetable are clean cultivated and there may be risk of more soil erosion. Vegetables are usually grown on fertile soil and they are weak competitors; thus more weed may grow and spread. Agrochemical use may increase as some of the vegetables and fruits need more plant protection measures. If there is a change in the cropping patterns of the target areas with more land devoted to vegetables, potato, and alternate crops and reduction in the area devoted to maize and wheat, there will be feed shortage especially in winter months for stall feeding of livestock as maize stover and wheat straw are important feed resources in the mountainous areas. The team and PO noted sale points of bundles of wheat straw in Siran valley, with astonishing comment by PO that I saw this new business which shows scarcity of local feed resources or improvement in the standards of living of the people in the areas as a result of more income used to buy feeds from market: the bundles are usually brought from other areas mostly from Punjab.

3.6 Sustainability

Distribution of good quality seed of improved varieties of field crops and vegetables will have sustainable effects on production and food security of the whole community for longer period of time as seed of good varieties spread quickly in villages and UCs and can, with a little care, be used for 3 to 5 years if the variety is not discarded by the variety evaluation committee. The BNF told that potato and French beans gave good yield and more income and the farmer will increase the area devoted to these crops. The seed facilities/seed bank will have sustainable effect beyond project period of two years, the owner will have long lasting business, and farmers will be getting good quality seed of field crops and vegetables in the coming year from the seed businesses of seed dealers who were supported to maintain seed bank with the help of MFSP. The team met a seed bank BNF in village Shoal Mazullah and interviewed him, the team found that he had developed his seed business and had sufficient quantity of good quality maize seed for sale; there are indications that he will sustain his seed business for many years: this concern BNF has also started selling seed of other crops and vegetables which he brought from big seed dealers in Mansehra city.

Similarly, poultry distribution will have longer sustainable positive effects on nutrition of the HH members and income of girls and women in all the UCs where MFSP was implemented. The effect of poultry distribution on the perception of community that improved breeds of poultry produce much more eggs than the local breeds, will have much long term effect on household nutrition and women income because about 75 of the BNF had improved breeds and in some villages the BNF were thinking to maintain and increase the breed. The female BNF told that some NBNF were asking for eggs of the improved breed for hatching; thus there is a clear trend of the spread of the good poultry genetic resources in the target areas. Similarly, the AI trained technical person with training in livestock extension will have sustainable business much beyond the end

of the project, and will have positive effects of breed improvement and livestock health and production in the targeted UCs benefiting many HH for many years after the end of project .

The rehabilitation of water channels with minor maintenance by the water users will have sustainable effects on availability of water for irrigation and on crop production for many years after the termination of the two years project period. The same is true for livestock ponds in the upper grazing zones.

The knowledge gained through training on improved practices for crop and vegetable production and the awareness about the benefit of good quality seed and fertilizers application will have sustainable effect on the food production and income beyond the project implementation period. The benefit of orchards will start accruing as they start fruiting within 3 to 5 year and the benefit will continue for many years depending upon the type orchard plants/fruits. The positive effect of forestation and reforestation will increase as the trees grow; the trees will not only reduce soil erosion but also provide protection against cutting and washing away of fields and houses by river water in some areas. The forestation will also prevent landslides for many years beyond project termination. Land stabilizing structures will also have sustainably effect on soil erosion by rain and water, land sliding; these structures will safeguard the land, ecological resources and livelihood assets.

Introduction of vegetables and potatoes in some of the inaccessible areas was a success; the BNF told that they will continue commercial vegetable production and kitchen gardening for income generation and HH use. Many BNF told that they will plant the improved type/variety of the bean as they produce much higher yield than the local beans. The BNF told that due to promising results of potato and new beans introduced by RDP and HA under the Concern's MFSP, these interventions will have sustainable effect on their cropping patterns, crop rotations, diet and food habits of the rural farming communities and others in the project areas.

As the results of introducing alternate crops such as mung bean and mash are encouraging, the new crops will be planted by BNF and may spread in the area and may become part of the cropping patterns. These crops will have a stabilizing effect on farm productivity, HH income and food intake diversity.

The social mobilization, creation and strengthening of the VO, and the linkage of VO with agriculture research, agriculture extension, FSC, and R&D organization outside Mansehra – will theoretically have sustainable effect on efficiency and improvement of the agriculture livelihood activities of the areas targeted by MFSP.

3.7 Replicability

The quality seed production, seed banks or business promoted by the project may be replicated by others members of the community in the project areas, and in other UCs of district Mansehra. There is also an urgent need to replicate the seed banks and seed production activities in similar mountainous areas of other districts.

Tunnels are replicable and some farmers have replicated the tunnels. Though in small number, the farmers have made some low cost tunnels for growing off-season vegetables and for growing nurseries of the spring and summer vegetables.

Some farmers, who got training on skills and techniques of compost making, have replicated the pits for compost making; they just dug pits in a corner of field near their homes and were using the unlined pits for making compost. Seeing the benefit and working of compost pits, some farmers were using natural depression for making compost.

Good poultry breed distributed by HA and RDP are being multiplied by some BNF. There are strong chances of spread of the improved poultry breed as some BNF told that NBNF are asking for the eggs of the improved breed for hatching and multiplication. However, the next generation may not be very productive as there will be loss of hybrid vigor.

There are good chances that orchards plantation will be replicated once the orchards start bearing fruits and the orchard BNF earn more income from the sale of fruits.

The vegetable production is increasing in the project areas, especially the French beans and peas and some improved varieties of other vegetables distributed for kitchen gardens are becoming popular in the target areas.

The project can be replicated in other mountainous area where the land holdings are small, the crops yield are low because the poor farmers use local low yield varieties and traditional methods of subsistence agriculture, there is less diversity of the crops grown, the livestock productivity is low and all these cause hunger, poverty and malnutrition problems.

3.8 Mainstreaming /Integration of Cross Cutting Issues

Gender balance: Women are usually involved in activities at home related to food preparation, kitchen gardening, poultry rearing, livestock feeding, milking, and stall cleaning. They have greater control over use and sale of eggs produced by poultry, milking of livestock and milk products like making yoghurt, butter and *lassi* (butter milk), and ghee. Poultry distribution directly benefitted women as user of poultry eggs; they have also more control over the milk and milk products and thus they got benefitted. Some of the project interventions gave direct monetary benefits to women, like sale of eggs increased their ownership and income.

The partner organizations of the Concern for the project were successful in formation of 120 Women Village Organizations in the two valleys of the project. Concern provincial office and the partner organization have employed females in the project. The females have been involved in field work and they interacted with members of WVO.

The formation of the 120 male VO and formation of vegetable growers association nicknamed as Vegras in Balakot by RDP is an achievement. Linkages with MFSC and FSC as cross cutting issues had been planned in the project document and implemented with apparently encouraging results.

DRR measures to deal with land sliding, soil erosion, deforestation, drought, flood damages were included in the design of the project and DRR measures were implemented which created more awareness in the communities for DRR. Some of the interventions such as soil and water management and conservation, compost making, and protection walls are related to conservation of natural resources and environmental protection.

Coordination between the Concern and the PO for project planning and implementation and involvement of the line departments at different stages is praiseworthy. The project has good coordination with government line departments, Agriculture Research Station at Baffa, Hazara Research Station in Abbottabad, and Federal Seed Certification and Registration Department. The concern had also good relationship and interaction with staff of government departments like EDO Agriculture, DO Extension, Agriculture Officers, Field Assistants, DO Livestock, Veterinary Officer, Veterinary/stock Assistant, Concern worldwide invited the different stakeholder to the project inception workshop for providing suggestions and inputs and then involved them in implementation.

Linkages: project developed linkages of the VO with agriculture research, agriculture extension, livestock, forestry, model farm services center at district headquarter and farm services center through farmers' visits, agriculture fairs and field days. The project also developed linkages with the research and development organizations in the province and outside the province.

To promote accountability to BNF, a complaint response mechanism (CRM) was developed and in place. When a complaint was received under the CRM, the PO generally solved the genuine complaints. Village organizations and communities were involved in selection of BNF. The BNF list used to be displayed at public places like Masajid and schools.

3.9 Lessons learned, information sharing, dissemination & networking:

Lessons Learned

The package size given in the project document was given to more than one HH because the land holding was small. This created problem for the BNF of how to divide the seed and fertilizers. In one case, the two BNF divide the seed, but one BNF took one bag of fertilizer (i.e. urea) and the other took the other bag of fertilizer (i.e. DAP)¹⁰.

¹⁰ The evaluation team found this in the focused group discussion as one farmer said he got only one bag of fertilizers which was white (that bag was of urea, because urea is white); this logically created

Thus the packages should be made prior to distribution and should not be left for the BNF to divide.

The PO told the evaluation team that seed procurement is a difficult job and not many good seed dealers are available; there is cheating in seed business, especially in the bulk supplies of the seeds after the procurement orders are given to suppliers. Seed is a specialized commodity and usually not available in great quantities particularly in case of cross pollinated crops like maize. So care must be taken to procure good quality seed of improved varieties adapted to local conditions.

The inputs intended for BNF must be tested before distribution; especially the bulk seed for distribution to BNF must be tested for germination and physical purity. The germination test is necessary to find if the seed will be able to germinate in the field and produce the required number of normal healthy seedlings or not. Fertilizers must be analyzed for plant food nutrients so that the aid worker know the quality of fertilizer, i.e. that analysis confirm to the grade and percentage of nutrients given on the bags. This is necessary to avoid losses to farmers and also to safeguard the reputation of PO and INGO.

Much care should be exercised in procurement of seed of the cross pollinated crops like maize, berseem, shaftal and spinach; the seed of these crops should be procured from a reliable sources.

The packages size for the different crops proposed in the design of project were later on reduced because the land holding was small. There is a lesson in this for future project formulation that any intervention intended for the target HHs should be based on the HH capability to use or handle the interventions.

Packages involving fertilizers for crops should be based on recommendations by researchers and crop specialists; special attention should be paid to the nature of crops (legumes and non-legumes), soil type, soil fertility and organic matter contents of the plough depth, water availability for irrigation/ rainfall, and expected yield while deciding the amount of fertilizers to included in package for distribution to the target population.

In one case, a farmer report that he did not get proper compost even after 14 months; this was probably due to dumping of very wet material like mixture of dung and urine and no trash and leaves; whatever the reason was, it indicate the lack of knowledge about the technique of compost making, thus there is a lesson for CWW and its PO to import proper training for composting techniques, to practically demonstrate compost making and give handout for proper composting techniques.

Tunnels are not very successful at higher altitudes, because of snow and cool temperature; however, tunnels are successful at altitudes ranging from 1000 – 1500 m

doubts in the mind of the teams that the CWW/PO did not distribute full package to BNF. The doubt was cleared by the field officer that PO gave the package to two BNF and they divided the seed but since there were two bags of fertilizers one BNF took one bag and the other took the other bag.

above sea level. In some areas four crops of short duration vegetable can be grown in tunnels in one year.

Information sharing, dissemination & networking:

The CWW and the two PO used to have planning and review meetings at regular intervals; in these meeting, in addition to other things, they used to share project information, problems and their solutions as lessons learned. The two PO used to share information and collaborated in agriculture fairs and agriculture field days.

To share information with greater proportion of the farming communities, the Concern's partner organizations arranged 20 agriculture field days in the project areas. Farmers were invited to the field days and they were shown demonstration plots, cereal crops and vegetables form inputs supplied to BNF for MFSP, tunnel gardens, alternate crops trials, fruit orchards, compost pits, and vegetables. Farmers were told the benefits of the interventions for increasing crop productivity, especially the benefits of the use of good quality seed of improved varieties of crops and vegetables and balanced fertilizers application, the benefits of plastic tunnels for off season vegetables production, benefits of artificial insemination, and benefits of improved poultry breeds. The project also arranged livestock field days not only for vaccination and de-worming but also for information related to existence of facilities for AI and pregnancy tests.

To further disseminate agriculture information, the project organized four agriculture fairs/exhibitions in the two target valleys of the project in which relevant government departments and private companies participated. MFSP had stalls highlighting improved varieties, good breeds, and material on best agriculture practices. Extension workers, researchers, livestock department staff, veterinarians, staff other line departments and NGOs participated in the agriculture fairs. Many farmers visited the fairs and learned new developments in agriculture.

Farmers' visits were arranged to agriculture research and development organizations within and outside the province to improve knowledge of the farmers about work and achievements the organizations; farmers learned new skills and techniques useful for increasing crop and livestock production at their farms.

Though the project did not had agriculture extension or outreach component to promote/communicate successes to relevant communities in the project areas, the fields days, agriculture fairs, farmers visits, training, and registration with farm services centers were much helpful in information sharing and knowledge dissemination.

The contribution for EC was generally evident from the EU logo on most of the signboards installed at the intervention sites. The EU logo of bags on inputs distributed in the target areas of MFSP was intended for visibility of the EU contribution for Agriculture development of the area. Most of the members of VO used to refer to the names of local partner NGOs (HA or RDP) in the discussion. Concern and one of the partner organizations for MFSP developed project brochure showing project details and achievements; the brochure had logos of EC, Concern Worldwide, and HA for visibility; and copies of the brochure were widely distributed

4. Recommendations

Based on observations during the evaluation process and analysis of the discussion with different stakeholders and BNF, the following recommendations were formulated for greater sustainability, proper future programme design and efficient project management.

Recommendations for sustainability

1. The PO, VO and BNF told that there is a need to continue the livelihood and food security activities in the UCs to have sustainable effect of the interventions.
2. Build and improve the capacity of PO, agriculture research, agriculture extension, livestock and veterinary, and agriculture educational institutions

Recommendations for future programme design

3. The package for inputs per HH should be based on capacity of HH to utilize and use the package for the purpose intended.
4. Post distribution survey, post harvest survey and quantitative impact assessment must be included in the project design.

Recommendations for further research and development work

5. The line department staff and PO were of the opinion that such projects should be replicated in other neglected UCs of Mansehra and other districts like Batagram, Kohistan, Swat , Bunir, Shangla, and Chitral, Gilgit, and Balochistan.
6. The communities in the transitional zone requested for some interventions for double cropping in the area so that they could increase food production and farm income.
7. The HH keep large number of livestock estimated to be more than a hundred thousand; quite a large proportion of the livestock depends on grazing in pasture above tree line in summer months: Pasture improvement was indicated in field visit as a potential intervention to improve livestock nutrition and health. Fertilizing selected fenced area in suitable patches of self reseeding pastures and controlled grazing of the fenced areas as pilot mini-projects for pasture improvement and livestock fattening/ productivity – may be some of the potential interventions that can be tried in 2 to 3 years projects.
8. Roof water harvesting and storage and rain water harvesting and storage for kitchen gardens were suggested to be potential interventions for improving HH vegetable production in areas where nor irrigation facilities are available.
9. The line departments' staff recommended that the projects modified in the light of lessons learned and with more involvement of technical experts should be

replicated in other neglected UCs of Mansehra and other districts like Batagram, Kohistan, Swat, Bunir, Shangla, Chitral, Gilgit, Balochistan and even in Afghanistan.

10. The line department and PO were of the opinion that if such project for nutrition improvement, poverty reduction, and food security has to be replicated, which they strongly recommended for other less developed and poor areas, the package for poultry should be increased to 25 birds with 6 months of feed and some material for small poultry houses to bring landless and poor females out of poverty circle.
11. Further work was suggested for high value crops and home preservation of fruits and vegetables.

Recommendations for management

12. A divisible package must not be given to more than one household to divide among them, but the PO must divide and give the package to more than two HH if there is a genuine reason for division or for smaller package.
 13. BNF selection criteria should be carefully drawn so that the most needy, poor and vulnerable are not excluded because they are not vocal and may be too poor to become member of the VO.
 14. Post distribution survey should be conducted to check the use and early performance of the inputs distributed like germination and early growth of crops in case of inputs distribution for crops and poultry birds sex ratio, mortality/survival data, breed conformity in case of poultry birds.
 15. Report writing must be improved, if needed the concerned technical persons in CWW and PO must be trained to build their capacity for good report and scientific expositions.
 16. CWW should select best institutions/organizations and best trainers for training programs. Concern' should support technical experts, crop specialists and livestock professionals in developing training manuals, and other material for agricultural training in local languages.
 17. CWW or its PO should ask for copy of the training material and keep that in the record. There should be an assessment of the training and learning activities by pre- and post-training testing or other sort f assessment.
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ANNEXURES

Annexure – 1: Evaluation TORs



Terms of Reference



**Final Evaluation of Concern's Mansehra Food Security Project (MSFP [sic MFSP])
2009 – 2011,
Co-funded by European Commission
(EU Reference: DCI-Food 2009/ 213-097)**

1. Background

Concern Worldwide is an international, non-governmental, humanitarian organization dedicated to the reduction of suffering and working towards the ultimate elimination of extreme poverty in the world's poorest countries. Concern's first involvement in Pakistan was an emergency response to widespread flooding in 1992. Concern became fully operational in Pakistan in 2001 to provide relief to the influx of Afghan refugees into Pakistan. Concern has since progressed into longer-term development programming in Baluchistan, Punjab and the Khyber Pukhtunkhwa (KPK) provinces. During the last ten years, Concern has also responded to a range of natural and complex disasters across Pakistan.

The increase in food prices during 2007-2009 threatened to reverse the progress made towards achieving the Millennium Development Goals and caused enormous food security challenges for poor and vulnerable populations in Pakistan. In response to this crisis, Concern implemented a 2 year (2009–2011) 'Mansehra Food Security Project' in the earthquake affected district of Mansehra in KPK province. This project was funded by the European Commission (EC) under 'Food Facility Regulation'. The overall objective of the project was to mitigate the negative effects of volatile food prices on poor and vulnerable communities. The specific objective of the project was to increase the food security of target poor and vulnerable communities through improved access to agricultural inputs, better farm management practices, diversified and increased crop production and enhanced access to local extension services and markets. The project was implemented in the eight worst earthquake-affected union councils in Mansehra district. The key results of the project were:

1. Target groups have improved access to quality agricultural inputs and enhanced crop and livestock management practices.
2. Target groups have diversified and increased crop production through improved land, soil and water management.
3. Target groups have strengthened linkages with relevant government agencies and enhanced access to local extension services and markets.

Concern implemented this project in partnership with two local NGO Partners, Rural Development Project (RDP) and Haashar Association. As per the agreement with the EC and in line with Concern's own policy to promote accountability for performance, an end-of project evaluation has been commissioned to evaluate the project.

2. Purpose and Objectives of the Evaluation

The overall purpose of the evaluation is to assess the degree to which the 'Project' met the objectives as outlined in the project proposal/log frame, with particular emphasis on appropriateness, timeliness, efficiency and effectiveness of the interventions carried out. In addition, the evaluation aims to extract the lessons learned from the project and provide recommendations to enhance the quality of on-going and future programming by Concern and our Partners.

Following are the major objectives of the evaluation:

Relevance:

- How well did the project relate to the specific needs of extremely poor and vulnerable populations in the context of Pakistan, Pakistan's poverty reduction plans/priorities, Concern Pakistan's Strategic Plan (2006-2009) and Concern Worldwide's organisational Strategic Plan;
- Was the overall project design relevant to the specific needs of the target population?

Efficiency:

- How far funding, staff, time and other resources contributed to or hindered the achievement of the results. Was 'Value for money' achieved?
- How well did the project management arrangements work? Has this project enhanced the capacity of the local NGO partner and grassroots community organizations?
- How well did the financial systems work?
- Were the risks properly identified and well managed?

Effectiveness:

- To what extent were the intended outputs and results achieved in relation to targets set in the project proposal/logical framework;
- How effective and appropriate was the project approach?
- In hindsight, how would the implementers have changed it?
- How well was beneficiary and stakeholders (including government) participation incorporated in the project management cycle? (consider gender here as well)
- What was the quality of monitoring and M&E system?
- To what extent were the results/objectives met (measured using programme indicators)

Impact:

- What was the project's overall impact and how did this compare with what was expected?
- Did the project address the intended target group and what was the actual coverage?
- Who were the direct and indirect/wider beneficiaries of the project? (provide gender disaggregated data);
- What difference has been made to the lives of those involved in the project? Compare the impact on men and women and specific vulnerable groups;
- Which of the Millennium Development Goals (MGDs) did the project contribute to?
- How did the project contributed to encouraging a positive supply response from the agricultural sector in Pakistan?
- How did the project contributed to mitigate the negative effects of volatile food prices on local populations in line with global food security objectives, including UN standards for nutritional requirements?
- How did the project engage with extreme poor and marginalized groups and support their empowerment most effectively? What are the positive or negative impacts on these groups?
- What were the unintended and the wider impacts felt?

Sustainability:

- What are the prospects for the benefits of the project being sustained after the funding stops and after Concern withdraws support? Did this match the intentions?
- How has/could collaboration, networking and influencing of opinion support sustainability?
- How did the project contributed to strengthen the productive capacities and the governance of the agricultural sector to enhance the sustainability of interventions?
- How was the exit strategy defined, and how was this managed at the end of the funding period?

Replicability:

- What aspects of the project are replicable in the project area and elsewhere?
- Under what circumstances and/or in what contexts would the project be replicable?

Mainstreaming/Integration of Cross Cutting Issues:

- How well did the project mainstream/integrate equality, Disaster Risk Reduction (DRR), HIV &

- AIDS and environmental considerations?
- To what extent was the 'accountability to the beneficiaries' promoted and progress made against the achievement of HAP (Humanitarian Accountability Partnership) principles/benchmarks? To what extent we followed up with complaints?

Lessons learned, information sharing, dissemination & networking:

- Were there any significant changes in the project design or the project context? What were the reasons for these and can any useful lessons be learned from this for application elsewhere?
- For whom could these lessons have relevance?
- How has the design of the project been amended as a result of lessons learned during implementation?
- Have lessons been shared during the life of the project – with whom, and to what effect?

Recommendations:

Provide targeted recommendations for improvements based on observations during the evaluation process (e.g. for sustainability, future programme design and management).

3. Methodology

The evaluation process should include:

- A desk review of the project information including the key documents listed in these terms of reference;
- Interviews with project staff, local NGO Partners and stakeholders including government departments to collect information on achievements, impact and difficulties faced;
- Field visits to the target areas and collection of primary data;
- Submission of the draft evaluation report to Concern for feedback;
- Incorporation of Concern's feedback in the draft report;
- Debriefing and submission of the final report.

4. Deliverables

The evaluator(s) will produce/submit a report in hard and soft form (of no more than 30 pages plus annexes, in Microsoft Word using Arial font 12). The report should include:

- Basic Information (max. 1 page)
- Executive Summary (2-3 page)
- Introduction/Background of the project (max. 1 page)
- Evaluation methodology
- Findings from the evaluation in relation to the issues under **Point 2** above
- Summary of recommendations/lessons
- Annexes - Evaluation ToRs, Evaluation schedule, List of persons interviewed and sites visited, Documents consulted, Declaration of Independence from the Project team, Data collection tools and raw data, and the project Log frame.

5. Documents to be shared with the evaluators

- The approved project proposal document.
- The original project log frames.
- Project Reports, including financial information.
- Baseline Report of the project
- Annual Outcome Assessment report of the project

6. Duration

The consultant will complete the work over a period of twenty (20) working days beginning with the date of signature of the contract and ending with the acceptance of the final report.

Activity	# of Days
Initial meeting/briefing	1
Document review, meetings, data collection, travel	15
Analysis, Draft report, Final report, Debriefing	4
Total	20

7. Reporting Line

Consultant will report to the Director of Programmes and liaise closely with MER Specialist and KPK Programme Manager.

8. Consultant Expertise

- Post-graduate degree in Agriculture, Food Security, Development Studies, Rural Development and/or related field.
- At least 10 year experience of conducting evaluations of development programmes.
- A solid and diversified experience within the agriculture sector including experience in evaluation of agriculture and food security related projects.
- Excellent report writing skills.
- Experience in the use of participatory and gender sensitive evaluation methodologies.
- Familiarity with DAC criteria for evaluating development assistance.
- Working knowledge of Hindko (local language of Mansehra district) will be an asset.
- Familiarity with the European Commission's aid delivery methods will be an asset.

9. Submission of Expression of Interest

Consultants/Firms that meet the requirements should submit expression of interest, which should include the following:

- Cover letter including the consultant's/firm's suitability for the assignment and current contact information.
- CVs of evaluation team leader and other team members, including detailed work experience, education; please clearly indicate the overall lead consultant
- Indicative budget

Deadline to submit the expression of interest is **December 8, 2011**. Shortlisted consultants/firms will be requested to submit/present a detailed evaluation work plan with description of evaluation methodology. It will be approved by Concern, and will act as the agreement between parties as to how the evaluation will be conducted.

All applications should clearly be marked as '**Consultant for MFSP External Evaluation**' and should be sent via email at: pakistan.islamabad.info@concern.net

Or post to:

**HR & Admin Manager
Concern Worldwide Pakistan
House # 8, Street 30, F-7/1 Islamabad, Pakistan**

Annexure – 2: Evaluation schedule

Activity	Split of days	Number of days
Travel to Abbottabad Initial meeting with CWW and PO staff. Briefing by Program Manger Meetings/discussion with staff of implementing partner NGO, RDP	1	1
Meeting with research staff of the Hazara Research Station, Abbottabad	1	
Disk review of the project documents, reports, etc. Working on check list of questions for focussed group discussion	1	14
Further work on checklist of questions for group discussions / interviews. Travel to Abbottabad	1	
Meetings and discussion with DO livestock. Meetings/discussion with staff of implementing partners NGO, Haashar Association	1	
Group and individual discussion with beneficiaries, non-beneficiaries, CBO, village elders, local project staff and local line department staff; and collection of primary data Field visit to the project intervention sites	4	
Meeting/discussion with EDO Agric and DO agriculture extension Meeting/discussion with research staff of Agriculture Research Station Baffa Travel to Peshawar	1	
Disk review of the project documents and reports	3	
Compilation of field visit and discussion information and analysis	2	
Analysis and compilation of preliminary results, preparation of draft report and its submission to CWW for feedback	3	
Debriefing.	1	
Finalizing report based on feedback from briefing and comments from Concern Worldwide staff on draft report circulated internally Submission of final report	1	
Total		20

Annexure – 3: List of persons met/interviewed and sites visited

A. Persons met/interviewed

- Aiesha Nadeem Malik, Concern Worldwide, Islamabad
- Akhtar Nawaz, Senior Research Officer, Hazara Research Station, Abbottabad
- Amjad, Research Officer, Agriculture Research Station, Baffa
- Anees Ahmad Khan, Chief Executive, Haashar Association
- Asma Bibi Research Officer, Horticulture, Agriculture Research Station, Baffa.
- Atta ur Rehman, Program Manager, Haashar Association
- Dr. Ali Akbar, Ex-Director livestock, Mansehra
- Dr. Naveed Akhtar, Director, Hazara Research Station, Abbottabad
- Dr. Rafique Mughal, DO livestock, Mansehra
- Dr. Rasheed Salim, Veterinary Officer
- Durrani Sahib, Livestock, Concern Worldwide, Islamabad
- Ejaz , Program Manager of MFSP, Concern Worldwide, Abbottabad
- Farhad Khan, Senior Research Officer, Cereal Crops, Hazara Research Station, Abbottabad
- Hamza Abbasi , Livelihood Coordinator, Concern Worldwide, Islamabad
- Ishtiaq Sadiq, Concern's Programme Manager for Khyber Pakhtunkhwa, Concern Worldwide, Abbottabad
- Kashif Jadoon, Finance Manager, Haashar Association
- Mazhar Logistic Officer, Concern Worldwide, Abbottabad
- Muhammad Bashir, NRM Consultant, RDP
- Mohammad Ayaz, Program manager RDP, MFSP
- Mohammad Saleem, Field Officer, RDP
- Mohammad Siddique, Project Coordination RDP, MFSP
- Naveed, DO Agriculture extension, Mansehra
- Noseeka, Program Officer of MFSP, Concern Worldwide, Abbottabad
- S.A Qayyum, Director, Agriculture Research Station, Baffa
- Sayed Riaz Ahmad Shah, EDO Agriculture, Mansehra
- Sherzada Khan, Concern Worldwide Pakistan, Islamabad
- Siddique Saifullah, Research Officer/ Seed Inspector, Testing Laboratory, Federal Seed Certification & Registration Department, Government of Pakistan, stationed in Hazara Research Station, Abbottabad
- Sultan Mohammad, Project Coordinator, Haashar Association
- Sumaira, Field Officer, Haashar Association
- Tahira, Project Assistant of MFSP, CWW

B. Sites Visits. In sites visits, the two male members of the evaluation team had focused group discussion with male village organizations and their members, clusters of the organizations, and also asked questions from individuals. The team interviewed the members of the executive body of the different village organization and ordinary members. The two female members of the evaluation team interviewed the women in the houses. The evaluation team also had visits to fields and interventions to physically see the crops like wheat, seed banks, poultry, AI trained staff shops, high tunnels, replicated low cost tunnels, orchard plants, nurseries, tree plantation, compost pits, water channels, constructed roads/trails, retaining/protection walls, gabion/spurs and loose stone check dams.

- UC Ghari Habibullah
 - Village Batang
 - Kaghan Valley Development Forum
 - Village Asari
 - Village Gull Dheri
- UC Shoal Mazullah
 - Village Alari
 - Village Shoal Mazullah
 - Village Khan Geri
 - Village Balan
- UC Sachan Kalan
 - Village Sachan Kalan
 - Village Gabar gali
 - Village Nawazabad
- UC Jabori
 - Village Jabri
- UC Bhogarmong
 - Village Bagh Gulethra
 - Village Jiggar
 - Village CDM

Annexure – 4: Documents consulted,

Alternate crops trial data, Excel file “alternate crop trail data Siran“

Mansehra Food Security Project: Annual outcome assessment report year one, 2010

Baseline Survey Report of Mansehra Food Security Project

Cereal Crops inputs

Excel file: Having; Calendar for tunnel vegetable culture and expected annual income – RDP in English and Urdu

Excel file: Having; Details of activity targets and details – RDP

Excel file: Having; Details of Artificial Insemination Kit – RDP

Excel file: Having; Package of Tomato and Cucumber Crops/Tunnel – RDP

HAASHAR Association, First Quarter Progress Report. Mansehra Food Security Project
<http://www.haasharpk.org/First%20quarter%20review%202011%20MFSP.pdf> Accessed 28 December 2011

HAASHAR Association, Mansehra, Pakistan. Brochure.

HAASHAR Association, Second Quarter Progress Report. Mansehra Food Security Project
<http://www.haasharpk.org/2nd%20quarter%20review%202011%20MFSP.pdf> Accessed 28 December 2011

HAASHAR Association, Third Quarter Progress Report. Mansehra Food Security Project
<http://www.haasharpk.org/3rd%20quarter%20report%20of%20MFSP%202011.pdf>
Accessed 28 December 2011

Internal impact assessment for year 2010

Kitchen Gardening: A file having

Mansehra Food Security Project – Progress Monitored, December 1, 2009- November 2011, Excel file “MFSP Progress Monitor Final“

Mansehra Food Security Project: End-line Study Report – JAN, 2012

Mansehra Food Security Project: Power point presentation

MFSP staff roles with M&E responsibilities.

MOU between Haashar Association, Mansehra and Agriculture Extension Department, Mansehra

Project Reports

RDP video <http://www.youtube.com/watch?v=xwW-9Btn8rQ>

RDP video http://www.youtube.com/watch?v=BQMxwy52R_k

SOPs/Guide lines for provision of inputs for kitchen gardening: Having (BNF) selection criteria and other information by RDP.

SOPs/Guide lines for provision of inputs for cereal crops (seed and fertilizers): Having (BNF) selection criteria and other information by RDP.

SOPs/Guide lines for provision of poultry package: Having (BNF) selection criteria and other information by RDP.

The approved project proposal document

The original project Log frame

Trial plots RDP data. Excel file

Annexure – 5 Declaration of Independence from the Project team

TO WHOM IT MAY CONCERN

Subject: Declaration of Independence

This is to declare that neither I (the team leader) nor any member of the evaluation team that undertook the End of Project Evaluation of “Mansehra Food Security Project 2010-11” implemented by Concern Worldwide, -- have been involved with the project in any capacity, which may have compromised the team position as independent evaluators.

The evaluation has been undertaken without any influence of Concern Worldwide project team or local partner organizations.

Regards



**Paigham Shah
Team Leader
Evaluation Team**

Dated: March 24, 2012

Annexure – 6 Data collection tools

Questions for interviews, meetings, and focused group discussion.

The questions given in the TOR under each of the DAC criteria and some additional evaluation topics were elaborated and given below in Part-I. Some explanation of the evaluation criteria is also given in Part-I. Specific potential questions for focus group discussion with the different BNF are given in Part-II. The questions will be addressed to different stakeholders; type stakeholders are given in squared brackets at the end of the questions. Much information about the evaluation criteria can be obtained from project proposal, reports, and different documents; if the team is satisfied with the information in documents, the questions related to that type of information may not be asked from all the stakeholders to save time otherwise the evaluation process may take too much time.

Part-I

Relevance: The extent to which the aid activity is suited to the priorities and policies of the target group, recipient and donor. Assessing whether the project is in line with local needs and priorities (as well as donor policy) also comes under relevance. Appropriateness is also related to relevance. Provision of seed may be relevant, but seed of a low yielding un-adapted variety may not be appropriate. Similarly, the breed of poultry may not be locally adapted, it may die, its growth may be slow, or eggs production may be low and thus may not be appropriate for the area or system of production. In evaluating the relevance of a programme or a project, it is useful to consider the following questions (DAC): To what extent are the objectives of the programme still valid? Are the activities and outputs of the programme consistent with the overall goal and the attainment of its objectives? Are the activities and outputs of the programme consistent with the intended impacts and effects?

How well did the project relate to the specific needs of extremely poor and vulnerable populations in the context of Pakistan, Pakistan's poverty reduction plans/priorities, Concern Pakistan's Strategic Plan (2006-2009) and Concern Worldwide organizational Strategic Plan;

- Did CWW on its own selected the geographical area for the project or the donors decided the area? [CWW]
- What considerations were used in the geographical selection of the areas and UC? [CWW staff, project designers]
- Did CWW decide the types of interventions while designing project or the donors decided the types of interventions? [CWW staff, project designers]
- On what basis, information, research, assessments, and/or were the projects interventions based [CWW staff, project designers]

Was the overall project design relevant to the specific needs of the target population?

- Were the project interventions based on need assessments of the most vulnerable in the UCs? [CWW staff, project designers]
- Did the CWW or its IP come and asked what you need for food security and improvement of the livelihood activities [BNF and village/community leaders]

Did the project involve disaster risk reduction aspects (DRR) and did it help in DRR?

Appropriateness (related to relevance) is the tailoring of humanitarian activities to local needs, increasing ownership, accountability and cost-effectiveness accordingly.

- Were the interventions appropriate for poverty reduction and food security basic needs? [CWW, IP]
- Did the MFSP reduced poverty of the BNF in the target area [CWW, IP]
- To what extent were the most affected or most vulnerable household targeted? [CWW staff, project designers, IP]
- Were the inputs, seeds (variety), fertilizers (types and balanced), poultry (breed) appropriate for the area and target population [BNF, IPs, line departments CWW]

- What was the quality of the seed and fertilizers? Good, average, not so good! [BNF, IPs, line departments CWW]
- Did you receive the full quantity of the seed and fertilizers? [BNF, CO]
- How you rate the size and quality of the packages? [BNF, IPs, CWW]
- How many poultry birds did you receive? How many male and female? [BNF who received poultry]
- How many of the poultry birds survived? Are they producing eggs? How many per week/month? [BNF who received poultry]
- Ask about the appropriateness and quality of other interventions like training, kitchen gardens, nurseries, irrigation components, ponds, roads/trails, and others [BNF]

Efficiency: proper use of project resources and good project management. Measures of the outputs – qualitative and quantitative – achieved as a result of inputs also comes under efficiency. Timeliness is also related to efficiency. If the donor, ING and IP are efficient, the donors will timely release, the INGO will procure inputs well in advance of the time needed and the IP will distribute the inputs just before they are needed to be applied. So timeliness is related to efficiency. When evaluating the efficiency of a programme or a project, it is useful to consider the following questions: Were activities cost-efficient? Were objectives achieved on time? Was the programme or project implemented in the most efficient way compared to alternatives?

- How far funding, staff, time and other resources contributed to or hindered the achievement of the results. Was 'Value for money' achieved? [WWC, IP]
 - What were the positive and negative aspects of the project resources in achieving the objectives of the project? (Concerned project staff, implementing partners, government line departments)
 - How much increase in production and monetary benefit were obtained from the use of inputs as compared NBNF? [BNF, IPs, line departments CWW]
 - Was the project staff adequate and competent? [WWC, IP]
- How well did the project management arrangements work? Has this project enhanced the capacity of the local NGO partner and grassroots community organizations? [WWC, IP]
 - How you found CWW as partners in implementation and project management? [IP]
 - Has this project enhanced your capacity for project implementation? [IP]
 - Did this project enhance capacity of community based organizations and BNF [BNF, CBO, IP, CWW]
- How well did the financial systems work?
 - What is your opinion about the financial transaction with CWW? Any comments on financial system of CWW [IP]
 - How did the financial system of IP work? [WWC, IP]
- Were the risks properly identified and well managed? [WWC, IP]
 - What types of risks did you come across and how you managed to avoid them? [CWW, IP]

Timeliness

- When did you get the crops inputs in relation to cropping pattern (especially the sowing time for the crops) from CWW for distribution to the BNF? [IP]
- When did you distribute the crops inputs to CBO or BNF? [IP]
- When did you get the seed and fertilizers for the rabi and kharif crops? [BNF]
- Were other program deliverables provided in timely manner? [WWC, IP, BNF]

Effectiveness: A measure of the extent to which an aid activity attains its objectives. In evaluating the effectiveness of a programme or a project, it is useful to consider the following questions: To what extent were the objectives achieved / are likely to be achieved? What were the major factors influencing the achievement or non-achievement of the objectives?

- To what extent were the intended outputs and results achieved in relation to targets set in the project proposal/logical framework; [CWW, IPs]
- How effective and appropriate was the project approach? [CWW, IPs]
 - How effective were the interventions in increasing crop and livestock productivity and thus food security and income generation? [BNF, CBO, line department, IP, CWW]
 - Did quality of the seed, fertilizers and other deliverable affected results/achievements?

- In hindsight, how would the implementers have changed it? [CWW, IPs]
- How well was beneficiary and stakeholders (including government) participation incorporated in the project management cycle? (consider gender here as well) [WWC, IP]
 - Did you involve BNF, the women, and Government line departments in project management?
- What was the quality of monitoring and M&E system? [CWW, IP and other stakeholders]
 - Did you monitor BNF selection, input distribution? [CWW]
- To what extent were the results/objectives met (measured using programme indicators): [CWW, IP and other stakeholders]

Impact: It is both positive and negative changes produced by a development intervention, directly or indirectly, intended or unintended. Impact can be assessed through before and after comparison and/or comparison between the perceptions of BNF and NBNF. When evaluating the impact of a programme or a project, it is useful to consider the following questions: What has happened as a result of the programme or project? What real difference has the activity made to the beneficiaries? How many people have been affected by crises and how many were benefited?

- What was the project's overall impact and how did this compare with what was expected?
 - What was the impact of seed and fertilizers on crop production? [CWW, IP, BNF]. This information could possibly be found in various reports but should be triangulated with responses from different stakeholders.
 - How many of 750 farmers trained on composting skills and techniques have started composting [CWW, IP]
- Did the project address the intended target group and what was the actual coverage? [WWC, IP]
 - What were the selection criteria for the selection of BNF? Did someone monitor that the intended groups have been targeted? What was the outcome of the monitoring of the selection of BNF. How much of the potential and /or selected BNF actually got benefitted? [WWC, IP]
- Who were the direct and indirect/wider beneficiaries of the project? (provide gender disaggregated data); [CWW, IP, Community members, BNF, and line departments]
- What difference has been made to the lives of those involved in the project? Compare the impact on men and women and specific vulnerable groups; [CWW, IP]
- Which of the Millennium Development Goals (MDGs) did the project contribute to?

There are 8 important MDGs; the first one is Eradicate Extreme Poverty and Hunger which has been the direct focus of the project. The other important one related to this projects are Promote Gender Equality and Women Empowerment, Reduce Child Mortality, Improve Maternal Health, Combat HIV/AIDS, Malaria and Other Diseases, Ensure Environmental Sustainability, Suitable question will be addressed to various stakeholders to find out the contribution of the project to the MDGs

- How did the project contributed to encouraging a positive supply response from the agricultural sector in Pakistan? [CWW, IP]
- How did the project contributed to mitigate the negative effects of volatile food prices on local populations in line with global food security objectives, including UN standards for nutritional requirements? [CWW, IP]
- How did the project engage with extreme poor and marginalized groups and support their empowerment most effectively? What are the positive or negative impacts on these groups? [CWW, IP]
- What were the unintended and the wider impacts felt? [CWW, IP]

Sustainability: Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn. Projects need to be environmentally as well as financially sustainable. When evaluating the sustainability of a programme or a project, it is useful to consider the following questions: To what extent did the benefits of a programme or project continue after donor funding ceased? What were the major factors which influenced the achievement or non-achievement of sustainability of the programme or project?

- What are the prospects for the benefits of the project being sustained after the funding stops and after Concern withdraws support? Did this match the intentions? [CWW, IP]

- How has/could collaboration, networking and influencing of opinion support sustainability [CWW, IP]
- How did the project contributed to strengthen the productive capacities and the governance of the agricultural sector to enhance the sustainability of interventions? [CWW, IP]
- How was the exit strategy defined, and how was this managed at the end of the funding period? [CWW, IP]

Replicability:

- What aspects of the project are replicable in the project area and elsewhere?
 - Are some NBNF growing vegetables? (CWW, IP)
 - Do some of farmers trained on composting skills and techniques have started composting? (CWW, IP)
 - Have some NBNF made tunnels for offseason vegetables growing? (CWW, IP)
- Under what circumstances and/or in what contexts would the project be replicable? [CWW, IP]

Mainstreaming/Integration of Cross Cutting Issues:

- How well did the project mainstream/integrate equality, Disaster Risk Reduction (DRR), HIV & AIDS and environmental considerations? [CWW, IP]

Direct the first question to CWW, IP

- To what extent was the 'accountability to the beneficiaries' promoted and progress made against the achievement of HAP (Humanitarian Accountability Partnership) principles/benchmarks? To what extent we followed up with complaints? [CWW, IP]
 - Was there mechanism for complaints and their follow ups? (CWW, IP)

Lessons learned, information sharing, dissemination & networking:

- Were there any significant changes in the project design or the project context? What were the reasons for these and can any useful lessons be learned from this for application elsewhere?

[Direct the first question to CWW, IP. If yes what were the reason for changes. Can the reason and changes be termed as lessons learned for application elsewhere?]

- For who could these lessons have relevance? [CWW, IP]
- How has the design of the project been amended as a result of lessons learned during implementation? [ask PO and CWW]

Did you learn some lessens during implementation? (IP, CWW) If yes what were they? Then direct the above question to IP and CWW

- Have lessons been shared during the life of the project – with whom, and to what effect?

If the answer to the lessons learned is yes then: Direct this question to IP and CWW

Recommendations:

Do you have any suggestions, comments or recommendation for food agriculture development, food security, and poverty reduction? [CWW, IP, Government departments, VO, BNF]

Do you have any suggestions, for designing and implementation of projects for agriculture development, security, and poverty reduction? [CWW, IP, Government departments, VO, BNF]

Any other suggestions and recommendations! [CWW, IP, Government departments, VO, BNF]

Part-II

Potential questions for individual and group discussion with VO and BNF

I. Crop seeds and fertilizers distributed

Seed and fertilizers were distributed for maize, wheat and potato cultivation by CWW/PO in 2010 and 2012

Relevance: What was the biggest need of the farming community for food security in your village and UC?

Did you and other farmers had a real need for the seed and fertilizers distributed by CWW/Partner Organizations?

Did the farmers used to apply fertilizers to maize, wheat and other crops? If yes what types of fertilizers and how much?

Appropriateness: What types of seeds (crops) were distributed by CWW/PO
Were the seeds (I mean the varieties distributed) appropriate for the locality?
How much seed and fertilizers were distributed by CWW/PO in 2010 and 2011?

Efficiency: Did the deserving poor needy vulnerable HH receive the seed and fertilizers package form CWW?

How was the quality of the seed? Did it germination well?

Were the seedlings healthy and grew properly?

Do you have any comment f the fertilizers distributed?

Timeliness: Did you receive the seed and fertilizers in time for sowing the crops?

Effectiveness: Did CWW seeds and fertilizers produce good crops?

Impact: How much was the yield form CWW inputs as compared to last year and/or compared those who did not receive the Inputs from CWW? BNF yield vs. NBNF yield or BNF yield before vs. after the project intervention

Sustainability: Have you saved and kept some seed for the next year?

Will you use certified seed and fertilizers in the coming years?

Replicability: Seeing the benefits of good seed and fertilizers, Do others i.e. NBNF planted improved varieties and applied fertilizers?

Mainstreaming/Integration of Cross Cutting Issues:

Did the women benefit from vegetable seed distribution for kitchen gardening?

Lessons learned, information sharing, dissemination & networking:

What did you learn from the CWW support?

Do you mention the benefits of CWW interventions to fellow farmers and neighbors?

Recommendations:

Do you have any suggestions for such work to make it more useful?

II. Vegetables seed distributed for semi-commercial production and kitchen gardening

Peas Tomato and Beans seeds and NPK (10-15-15) fertilizer was distributed for 1 -4 kanals and seeds of other vegetables were distributed for kitchen gardening.

Relevance: Did you and other farmers used to grow vegetables for kitchen gardening or for sale prior to MFSP?

Did you need/want vegetable seeds and fertilizers distributed by CWW/IP?

Did the HH use to grow vegetables for sale before the project?

Do the HH now grow vegetable after the project ended in Oct 2011?

What types of vegetable are generally grown in the area?

Appropriateness: Were the vegetables seeds (I mean the varieties) appropriate for the locality?

Were the types of vegetables distributed appropriate for the area or do you suggest other types?

Efficiency: Did the deserving poor needy vulnerable HH receive the seed and fertilizers package form CWW?

How was the quality of the vegetable seeds? Did the seed germinate well?

Were the seedlings healthy and grew properly?

Timeliness: Did you receive the seed and fertilizers in time for sowing the vegetables?

Effectiveness: Did CWW vegetables seeds and fertilizers produce good yield?

Impact: How much were the yields of vegetables form CWW inputs as compared to last year and those who did not receive the Inputs from CWW?

Sustainability: Will you grow vegetables in the coming years and will apply fertilizers?

Did you keep some seed for the next years planting?

Has some NBNF started to grow vegetables?

Replicability:

Seeing the benefits of good seed and fertilizers, did others i.e. NBNF planted the vegetable and applied fertilizers?

Mainstreaming/Integration of Cross Cutting Issues:

Did women benefit from vegetables seeds, kitchen gardening, vegetables use or sale?

Did use of vegetables from kitchen gardening improved your diet and nutrition and health?

Lessons learned, information sharing, dissemination & networking:

What did you learn from the CWW support? Do you mention the benefits of CWW interventions to fellow farmers and neighbors?

Recommendations:

Do you have any suggestions for vegetable growing in your area?

III. Seed production demonstration plots and seed banks

CWW/PO established community-based certified seed production demonstration plots and community-based seed banks

Was seed production the need of the farmers and communities?
What benefits the farmers got from the demonstration plots and seed banks?
Are those seed banks operating after the termination of project?
Did the seed growers benefit from seed production?
In your opinion will the seed bank operate after the end of project?
Will some NBNF start producing seeds and will start seed business?

IV. Training for improved practices: Crops, Vegetables, Soil conservation, composting

Were the trainings based on needs of the community?
Have you or anyone received training arranged by CWW, Haashar, or RDP?
Did you learn some new things about crops varieties, fertilizers and production practices that you did not know before?
Were pre- and post training knowledge tests conducted to assess the efficiency of training?
What were the results of training knowledge tests?
Did the partner organizations or trainee distribute copies of teaching material, any publication or printed matter related to training?

V. De-wormers and vaccination

Relevance: Was there any experimental evidence or survey results that the animals had worms or they need vaccination?

Appropriateness (related to relevance): Were the vaccination and de-wormers appropriate?

Efficiency: Did the farmers receive instructions for using the de-wormer?
Did you get some brochures for proper use of de-wormers?
Did you and other knew about AI, pregnancy tests facilities in the MFSP area?
Have some livestock owners in the village availed AI facilities initiated by CWW/PO?

Effectiveness: Did vaccination prevented diseases common in the area?
Did de-wormers improve the health, weight gain and milk production of livestock?

Impact: How much milk production was increased by de-wormers?

Sustainability: Will you use de-wormers again for your livestock?

Replicability: Seeing the benefits of vaccination and de-wormers, do others i.e. NBNF or your neighbors or relative, friends have started vaccination for their livestock and started to use de-wormers?

Mainstreaming/Integration of Cross Cutting Issues:

Did women/girls benefit from form improvement in health and milk production of livestock as a result of project efforts?

Lessons learned, information sharing, dissemination & networking:

What did you learn from the CWW support? Do you mention the benefits of CWW interventions to neighbors, relatives and friends?

Recommendations:

Do you have any suggestions for improving livestock health, production and breed improvement?

VI. Poultry

CWW and its partner organizations (Haashar and RDP) distributed 6 to 5 poultry bird to many households to improved poultry ownership, diet, nutrition and income.

Relevance: Was the poultry distribution relevant to the needs of the poor vulnerable HHs?
Do HHs, women and girls in this area rear poultry?
Do HH women need poultry?

Appropriateness (related to relevance): Were the poultry birds distributed adapted to local conditions?
How many survived and you have now?
What is the name of the breed distributed by CWW/HA/RDP?

Poultry Package: How many birds/chicken did you received from the CWW/HA/RDP?
How many were/are female and how many males?
Did you receive other things with poultry? Like feed, drinkers, feeders, medicines!

Efficiency: Did the poor, vulnerable and deserving or influential HH/people get the poultry from CWW/HA/RDP?
What is your opinion about the egg production from poultry distributed by the CWW/IP as compared to your own/local poultry?
How many eggs the CWW/HA/RDP distributed poultry produce per day, week or month?
How many eggs the local breed of poultry produce per month?
Did the IP give you some suggestions for the rearing the birds they distributed?
Have you received training or instructions for poultry production form CWW/HA/RDP?
Did you get some brochures for successful and profitable poultry production?

Timeliness: Were the poultry birds distributed in good season for better survival, growth and productivity?

Effectiveness: Did the poultry help you in generating some income?
Have you sold chicks/hens for profit?
Do you use all the eggs for family use? If no how many you sell and how many you use for your own consumption?
How much income do you get form the poultry in a month form how many birds

Impact: How much eggs you get from the poultry given to you by Haashar or RDP as compare to local poultry

Sustainability: Will you rear poultry in the coming years?
Did you increase the poultry form the ones given to you by Haashar or RDP (CWW)?
Have vaccinated your birds for disease control?

Replicability: Seeing the benefits of improved poultry breeds, do others i.e. NBNF or your neighbors or relative, friends started poultry rearing or the improved breeds or asked you for the eggs of improved breeds?

Mainstreaming/Integration of Cross Cutting Issues:

Did women/girls benefit from the poultry given by Haashar or RDP (CWW)? Did the benefits accrue from using its eggs or from sale of eggs or chicken?
Did the use of eggs from the good breeds improve HH diet, nutrition and health, especially the women and children?

Lessons learned, information sharing, dissemination & networking:

What did you learn from the CWW support? Do you mention the benefits of CWW interventions to neighbors, relatives and friends?

Recommendations:

Do you have any suggestions for improving home poultry in your area?

VII. Visit to other project interventions

CWW/PO have implemented other interventions; some of the given below with potential interview questions related to them. These question were useful for getting information from different stakeholders and BNF if present at the site during the team visit

Demonstrations on tunnel gardening at farm level

How did your tunnel work, did it produce higher yield?
Are you satisfied with the tunnel performance?
Were the tunnels replicated by other? Will you replicate the tunnel?
Are the tunnels being used after the end of project?
Did you get training? Did you learn new things in the training?
How much income did you get from the tunnel?

Orchards raised on privately owned land

Did CWW/IP provide training on good orchard management?

Trials on crop rotation/soil nutrient at farm level

Objective of the trials: Increased usage and awareness of soil fertility techniques
Was the objective achieved?

Irrigation channels rehabilitated

How did irrigation help the farmers?
Did it help in crop diversification?
Did you notice increase in cropping intensity? How much?
Did you notice Increase in crop yield?
Did you observed increase in crop diversity grown by the beneficiaries?
Did the irrigation interventions increase in delivery efficiency?
What were the physical and social impacts of irrigation scheme?

Government Farm Services Centers:

Village groups strengthened and linked with government farm services centre.
Are the groups and farmers availing the centre facilities?

Others

What lessons were learnt from the field trials and from the best practices?
What was the effect of exchange visits on farmers?
What did you learn from agricultural fairs?
What were the effects of the roads and trails?

Annexure – 7: The project Log frame

Mansehra Food Security Project Logical Framework Matrix

	Intervention Logic	Objectively verifiable indicators of achievement
Overall Objective	To mitigate the negative effects of volatile food prices on poor and vulnerable communities in the North West Frontier Province of Pakistan.	Significant improvement in food security situation for the participating households.
Specific Objective	To increase the food security of poor and vulnerable communities through improved access to agricultural inputs, better farm management practices, diversified and increased crop production and enhanced access to local extension services and markets in Mansehra District, NWFP Pakistan.	Food availability for participating households from own food production increased by end of project (EoP).
		Farm production per unit of land of beneficiaries increased by the EoP.
		Poultry and livestock ownership and productivity increased by the EoP.
		Improved acquisition of inputs for agricultural production and physical access to markets through roads/trails construction for beneficiaries by the EoP.
		Diversity of food consumption for the participating households in terms of items increased by the EoP.
Expected Results	ER1: Target groups have improved access to quality agricultural inputs and enhanced crop and livestock management practices;	Approximately 7,600 farming households provided with 325 MT of crops seeds (Wheat, Maize and Potatoes) and 770 MT of fertilizers to improve their production of 1,559 hectares.
		Approximately 2,400 farming households/backyard kitchen gardeners provided with 35 MT of vegetables seeds (Pease, Tomato and Beans) and 120 MT of fertilizers to improve their production for 486 hectares of arable land.
		At least 70% Kitchen gardeners/field cultivators growing/consuming products
		20 community-based certified seed production demonstration plots
		8 community-based seed banks established and operating
		600 farmers trained on improved crops & vegetables production and soil conservation measures
		At least 750 farmers trained on composting skills and techniques
		At least 20,000 animals de-wormed and vaccinated
		16 community-based artificial inseminators trained and operating in the target areas
		1,500 households have improved poultry ownership

The project Log frame -- continued

Expected Results	ER2: Target groups have diversified and increased crop production through improved land, soil and water management.	10 demonstrations on tunnel gardening at farm level
		25 orchards raised on privately owned land
		25 trials on crop rotation/soil nutrient at farm level
		Increased usage and awareness of soil fertility techniques
		20 forest nurseries established & successfully operating
		120 hectares of soil eroded/land degraded area covered through a-forestation/re-forestation campaigns.
		200 hectares of soil treated with soil and water conservation measures
		Increase in soil fertility through improved soil and water conservation techniques
		60 hectares of arable land brought under irrigation
		4 livestock water ponds constructed
		200 people trained in soil and water conservation infrastructure operation and maintenance
		Increase in crop diversity grown by the beneficiaries
		Expected Results
16 agriculture field days held for dissemination of best practices and lessons learnt through field trials and research work		
4 exchange visits for farmers facilitated		
2 local agricultural fairs held.		
8 market access roads/trails constructed		

Annexure – 8. Economic analyses of crops packages:

Economic analysis of wheat seed production plots packages for 2010-11 growing season:

Comparison of Beneficiaries (Concern/PO seed and fertilizers) expenditure and income versus Non Beneficiaries' (own seed and fertilizers) expenditure for Mansehra Food Security Project

The wheat package consisting of 50 kg wheat seed, 50 kg DAP, 25 kg urea was given to BNF to plant wheat on 0.2 ha (one jarib or 4 kanals). The beneficiaries obtained a yield of 123 kg per kanal of wheat grain in the Rabi 2010-11 season, and non-beneficiaries obtained the same as last year yield 60 kg yield per kanal reported by Base line study. Using the method of economic analysis of data from on-farm experiments given in CIMMYT (1988)¹¹ with slight modifications, an economic analysis of the beneficiaries and non-beneficiaries on-farm yields was done to quantify the benefits which accrued to beneficiaries in comparison with non-beneficiaries.

Certain assumptions were made for the economic analysis, and they are:

- The beneficiaries used the full package, for wheat. The non-beneficiaries applied half of the urea dose, no DAP and used food grade wheat as seed.
- Transportation cost and application charges were not included in the calculation
- Harvesting was done by the farmer himself
- Threshing charges was included at the rate of 10 % of the produce
- Straw was considered in the benefits calculations as it is very important ingredient of animal feed, whether it is sold, or it is used by beneficiaries, in which case opportunity cost was used in the calculations.

Economic analysis of the wheat package and total benefit to beneficiary households:

Partial budgeting was used in which case only the variable costs were included i.e. the cost of seeds and fertilizers. Other costs like land rent (opportunity cost if own land), seed bed preparation, sowing operation costs, water charges, irrigation costs, harvesting charges, etc. were the same for beneficiaries and non-beneficiaries, and thus were not included. The difference between the net benefits was compared with the difference between variable costs and the marginal rate of return was calculated. The calculations are present in the table below.

The economic analysis of the monetary benefits shows that beneficiaries obtained about 19920 rupees net benefits as compared to 12150 rupees net benefits of non-beneficiaries with a marginal rate of return of 206 %, which is the ratio of extra benefit and extra cost expressed as %.

This could be a good extension message for the farmers i.e. if a farmer invests about 100 rupees in good quality seed of improved variety, plus balanced fertilizer (N-P) at the rate of 2 bags of DAP, and 2 bags of urea per acre, the farmer will receive an improved yield equal to 206 rupees, meaning farmers will get their own 100 rupees plus 106 rupees more.

Actually the beneficiaries did not invest any money in seed and fertilizers because they received the input from CWW and the beneficiaries got increase yield worth Rs 15,120 per acre. One can go further to calculate the project benefits from wheat, maize, etc to all the supported households and benefits will be in million of rupees for crops and other interactions of MFSP.

¹¹ CIMMYT. 1988. From agronomic data to farmers' recommendations: an economic training manual. International Maize and Wheat Improvement Center for (CIMMYT), Mexico

Economic analysis of the wheat package indicating total benefits per acre and per kanal

Costs and benefits per acre	BNF	NBNF	Difference	Unit
Variable cost per acre				
Seed 50 kg, at the rate of Rs. 40 per kg for BNF and Rs 25 per kg NBNF ¹	2000	1250	750	Rupees
DAP ² 100 kg = 2 bags for BNF only	5600	0	5600	Rupees
Urea ³ 100 kg = 2 bags for BNF and half for NBNF	2000	1000	1000	Rupees
Total variable costs	9600	2250	7350	Rupees
Grain and straw yield				
Grain yield estimates after harvesting ⁴	984	480	504	Kg/ha
Deduction of threshing charges (10 % of the estimated yield)	98.4	48	50.4	Kg/ha
Grain yield estimates after threshing	885.6	432	453.6	Kg/ha
Straw yield (calculated from grain-straw ratio of 1:1.5) ⁵	1476	720	756	Kg/ha
Benefits per acre				
Benefit from grains at the rate of Rs. 1000/40kg, government rate ⁶	22140	10800	11340	Rupees
Benefit from straw at the rate of Rs. 250/50kg, average rate ⁷	7380	3600	3780	Rupees
Total gross benefit = income from grain +income from straw	29520	14400	15120	Rupees
Net benefit = gross benefit – variable cost	19920	12150	7770	Rupees
Marginal rate of Return (MRR %) (Extra benefit/extra cost)*100			206	Rupees
Total benefit to 4149 HH from 445 ha			16.63 Million⁸	Rupees

1. The certified seed cost of Rs. 40/kg was used in case for BNF; the cost of NBNF seed was estimated as Rs. 25/kg which is the support price of wheat grains.
2. The price of DAP was considered as Rs. 2800 per 50 kg bag,
3. The urea cost was considered as Rs 1000 per 50 kg bag
4. The end-line study reported 123 kg per kanal = 984 kg per acre yield for BNF against 60 kg per kanal = 480 kg per acre yield before the project which was assumed to yield of NBNF
5. Straw yield was estimated as 150% of grain yield for the semi dwarf varieties of wheat.
6. Government price of Rs 1000 per 40kg was used to calculate monetary benefit from wheat grain.
7. Straw price of Rs. 250 per 50 kg was used to calculate monetary benefit straw
8. The net benefit to the 4149 HH from 445 ha of wheat is about 16.63 million rupees with extra expenditure on seed and fertilizers worth about 8.08 million rupees paid from MFSP funds by CWW.

**Annexure – 9: Mansehra Food Security Project – Progress Monitored,
December 1, 2009- November 2011**

Project/ Result/Activity:	Unit	Year 2010		Year 2011		2010 & 2011		% target achieved	
		Total	Achieved	Total	Achieved	Targets	Achievements		
ER1: Target groups have improved access to quality agricultural inputs and enhanced crop and livestock management practices									
1. Provide inputs for crops mainly for wheat, maize and potato to small landholders	Maize	Households	1266	4552	1266	3660	2532	8212	324
		Seed (T)	54,30	26,75	54,30	25,46	108,60	52,21	48
		Fertilizer(T)	130	225	128	220	258	445	172
		Hectares	261	466	261	412	523	878	168
	Wheat	Households	1.267	1.572	1.267	2.577	2.534	4.149	164
		Seed (T)	54,30	25,00	54,30	32,50	108,60	57,50	53
		Fertilizer (T)	128	75	128	130	256	205	80
		Hectares	253	181	261	264	514	445	87
	Potato	Households	1.267	953	1.267	945	2.534	1.898	75
		Seed (T)	54,30	100,00	54,30	100,00	108,60	200,00	184
		Fertilizer (T)	128	31	128	26	256	56	22
		Hectares	261	50	261	50	523	100	19
2. Provide inputs for vegetables (seeds and fertilizers) for kitchen gardens and field cultivation	Beans	Households	400	1.478	300	1.448	700	2.926	418
		Seed (T)	1,60	1,60	1,60	1,60	3,20	3,20	100
		Fertilizer (T)	20	10	20	10	40	20	50
		Hectares	81	65	81	65	162	130	80
	Peas	Households	400	1.424	300	752	700	2.176	311
		Seed (MTs)	16,00	16,00	11,80	8,00	27,80	24,00	86
		Fertilizer (T)	20	10	20	5	40	15	38
		Hectares	81	65	41	20	122	85	70
	Tomato	Households	400	1.494	300	800	700	2.294	328
		Seed (T)	0,01	0,01	0,00	0,00	0,01	0,01	100
		Fertilizer (T)	20	40	20	10	40	50	125
		Hectares	81	65	20	15	101	80	79
	Mix Vegeta ble	Households	0	1.839	300	1.200	300	3.039	1013
		Seed (T)	0,65	0,65	3,36	3,36	4,01	4,01	100
		Hectares		57	97	97	98	154	157

Annexure – 9: continued

Project/ Result/Activity:	Unit	Year 2010		Year 2011		2010 & 2011		% targets achieved
		Total	Achieved	Total	Achieved	Targets	Achievements	
3. Establish community-based certified seeds production demonstrations plots								
3 Demonstration plots	Plots	10	23	10	11	20	34	170
4. Seed banks	Seed Banks	4	4	4	4	8	8	100
5. training on crop management practices	Trainings	12	15	12	12	24	27	113
	Participants	300	508	300	440	600	948	158
6. Compost pits	Pits	15	15	15	15	30	30	100
	Farmers trained	376	358	376	498	752	856	114
7. Livestock field days vaccination/de-worming	Campaigns	4	4	4	4	8	8	100
	# of ruminants	10.000	59.355	10.000	45.885	20.000	105.240	526
8. Artificial insemination	Trainings	1	1	1	1	2	2	100
	Farmers	16	15	16	16	16	16	100
9. Distribute improved breeds of poultry	Households	750	1366	1000	1250	1750	2616	149
	Poultry Birds	4500	8196	5375	6250	9875	14446	146
10. Tunnel gardening	Number	6	5	5	15	11	20	182
11. Establish orchards	Orchards	12	15	13	13	25	28	112
12. Trial plots for crop	Plots	12	36	13	23	25	59	236
13. Establish forest plants nurseries	Nursery	10	10	10	10	20	20	100
14. Carry out tree plantations	Hectares	60	148	60	109	120	257	214
	Plants	75.200	152.600	75.200	152.750	150.400	305.350	203
15. Water Conser. and manag't infrastructure	Scheme	4	4	5	5	9	9	100
Stone check dams	Hectares	100	131	50	50	200	181	91
Retaining walls	Cubic feet	13.00	14.43	6.50	5.99	19.50	20.42	105
Gabion spur	Spur/gabion	2	5	2	3	4	8	200
Catchment drains	Drains	1	1	1	2	2	3	150
17. Form and train Implementation & Maintenance Committees for each scheme	Trainings	3	4	3	4	6	8	133
18. Strengthen village groups	Village groups	120	120	120	120	240	240	100
19. Agric. field days	Field Day	8	12	8	8	16	20	125
20. Agric.Fairs/exhibitions	Fair	1	2	1	2	2	4	200
21. Facilitate farmers' exchange visits	Visit	2	4	2	3	4	7	175
22. Construct farm to market roads/trails	Scheme	4	6	4	21	8	27	338

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