Project Brief:

Project Development Objectives (PDO)

a) Improving on-farm water management system by upgrading watercourses introducing advanced irrigation technologies, and strengthening capacity of communities, farmers, and OFWM staff

b) Increasing agriculture productivity as well as promoting agro-processing and value addition.

Outcomes:

It would contribute towards reducing food production deficit of KP, bringing higher incomes from the farming, creating more employment opportunities in rural areas, improving living standards of the farmers, and protecting environment.

Key Objectives:

The Khyber Pakhtunkhwa Irrigated Agriculture Improvement Project (KP-IAIP) will have following key objectives.

i) Improve performance/functionality of the farm level irrigation delivery system and reduce water wastages.

ii) Make water allocation/distribution more equitable amongst the shareholders.

iii) Enhance productivity of irrigated agriculture and promote crop diversification by producing high value horticultural crops.

iv) Increase climate resilience of agriculture through adaptation and mitigation measures.

v) Expand the existing as well as create new mechanisms for provision of services to support irrigated agriculture in the private sector on sustainable basis.

vi) Complement provincial government’s efforts in poverty alleviation through generating enhanced employment opportunities, maximizing farm returns, and improving livelihood of the farming

**Specific Project Objectives (Quantitative Term)**

1. Improvement of 14260 numbers watercourses of Community Irrigation System.
2. Installation of 11650 acres High Efficiency Irrigation System in the province.
3. Construction of 5000 numbers of water storage tanks.
4. Provision of 500 numbers of LASER Land Leveler.
5. Capacity Building, Strategic Studies and Value Additio**n;.**
6. Project Management and Monitoring.

**Underlying objectives:**

The underlying objectives of envisaged initiatives are consistent with that of the overall agriculture sector, which aims at enhancing water use efficiency at the farm, ensuring food security, economic uplift of small farmers, and improving the economy of the province as a whole.

The project has four main components:

1. Improvement of Community Irrigation Systems;
2. Promoting Innovative Technologies for Efficient Water-use;
3. Capacity Building, Strategic Studies-Research and Value Addition;
4. Project Management and Monitoring.

**Component C: Capacity Building, Strategic Studies-Research & Value Addition:**

After assisting farmers in improving their irrigation infrastructure, the project will help them in capitalizing potentials of improved farming opportunities, particularly in high value crops farming.

This Component has the following three sub-components:

**6.2.3.1. Component C1.1: Strengthen Farming, Processing, and Marketing Capacity:**

Focusing on building of overall capacity of the farmers, processors and other stakeholder in adoption of modern production, processing, marketing, and their exposure to improved agriculture technologies to transform agriculture to higher levels of production, productivity, efficiency, and profitability leading to increased demand for rural labor and products emanating from all levels of producers.

A diversified range of trainings will be offered under this sub-component to build the capacity of farmers in;

1. Best practices for efficient irrigation system management, off-season vegetable farming, export strategies, good agricultural practices GAP, drying and dehydration of fruits/vegetables.
2. Practical demonstration through improved technologies and methods to increase agricultural production applying integrated pest management IPM.
3. Enhancing capacity of farmers, processors and other stakeholders in harvest, post-harvest handling, grading/packaging, marketing, branding and international standard compliances e.g. (Global GAP, IFS, HACCP, WTO etc.).
4. Exposure of stakeholders to advanced technologies through farmer-to- farmer exchange visits
5. Establishment of an ICT-based Farmers Service Center and access to such existing commercial services
6. Trainings in business plan preparation as per need.

**Mechanism:**

Project will provide assistance for

1. Establishment of demonstration sites up to 5 acres one to two sites each district to promote new technologies and demonstrate the comparative and competitive advantages of the new technologies.
2. Under this sub component the project beneficiaries will be provided support for participation in agriculture expos i.e. DAWN, TDAP etc. as well Agriculture Fair will be organized periodically
* These activities would be complemented by a project-wide ICT-based Famers Services center to provide relevant information to farmers through different means (pamphlets, videos, Facebook page, radio, TV, weekly papers, cell phones etc.) and to advise them on crop production and marketing as well market trends and information.

6.2.3.2. Component C1.2: Institutional Capacity Strengthening

Objectives:

The component will be directed at developing management skills and technical skills of water management staff.

**The key activities under this sub component include;**

1. Building capacity of OFWM staff in high value crop production, off-season farming, and good agricultural practices.

ii) Training in Designing of High Efficiency Irrigation Systems and its operation and maintenance.

iii) Training in (irrigation agronomy, crop water management, crop planning and management etc.)

iv) International training and learning trip to study best practices in crop water management, agribusiness and agriculture (Netherlands, morocco, Egypt, Jordan etc)

v) Master’s Degree Programs In Irrigation, HEIS, Agribusiness, Post-Harvest and agriculture marketing.

vi) Provision space for internship slots having bachelor (Hons) degree in Agriculture Sciences/Agriculture Engineering

vii) Establishment of a new water management-training Institute; and strengthening of existing training center DI Khan.

viii) (Iv) Activities Identified In The Operational Risk Assessment Frame work (Oraf) , Governance And Accountability Measures. Details of the envisaged tasks are described in the following Sections;

**Capacity Building and Training:**

**Approach and Methodology:**

Currently trainings are arranged thorough Water Management Training Institute (WMTI), DI Khan. Through this project capacity of WMTI will be improved and a new training institute will be established in Peshawar. **Capacity of the existing staff posted in the training institute DIK will be enhanced for implementation of the proposed national level courses under the project.**

* To overcome this constraint the project will engage both national and international organizations/institutions in meeting the training needs of the farmers and staff of the OFWM to improve the effectiveness, efficiency and develop knowledge base locally. The programs will be directed at developing management skills alongside the technical skills, in particular for farmers, agri-enterprises, service providers (certifying bodies etc.), agriculture professionals and officers/officials of the department.
* To efficiently implement this component KPIAIP will partner with leading universities, research institutes, international organizations, certifying bodies, training institutes and various private-sector organizations to deliver such technical and managerial trainings.

**6.2.3.3. Component C 2: Strategic Studies-Research and Value Addition:**

The block allocation with financial phasing of Rs.700 million has been made for this sub component-C-2 as given at s.no 17 of table-7 on page 45. However, at the time of execution detail costing of the activities will be made as per need basis and will be part of AWP.

1. **Sector Profiling, assessment & Analysis:**

**Approach/methodology:**

First a rapid participatory appraisal and analysis of the target sectors will be conducted to develop an overall profile and mapping of the fruits & vegetable clusters. Efforts will be made to adopt a sub-sector cluster approach so as to target those areas offering the greatest potential for crop improvement and value additions.

* The start-up phase of the project will be initiated with desk studies that allow identification of the most important clusters.
* It will also develop general cluster maps and sector profiles based on available secondary data.
* The exercise will effectively map high-potential clusters/regions, prioritize interventions and also help to identify potential clients for the program support.
* International and domestic experts will also be deployed through this component **to build upon selected priority clusters and conduct comprehensive sub-sector and value chain assessment and analysis**
* **This sub-component is also expected to generate a limited number of actionable studies, which will assist the project and famers in making informed choices in their investment decisions**

**Expected TORs :**

* This exercise will effectively map high-potential clusters/regions, prioritize interventions and also help to identify potential clients for the project.
* Quantitative and qualitative techniques will be used to carry out value chain analysis of selected high potential clusters to identify key constraints; relationship between stakeholders; potential new markets; required support services and training needs and related socio-economic issues.

**Expected Outcomes:**

* Commercially viable market-oriented solutions and interventions will then be identified and formulated in collaboration with all stakeholders.
* The interventions will be designed to, inter alia, include technical assistance for capacity building, training programs and cost sharing grant support for market development.

Write up:

**Figure 2.2 Illustration of Key Functions of an Innovative Market-Driven Extension Approach during Periods of Economic Growth and Changing Consumer Demand, Especially for High-Value Products**



* Strategies aimed at alleviating poverty should include three key elements:
* Identifying opportunities for small-scale farmers (e.g., access to natural resources, markets, and services to build up assets)
* Facilitating the empowerment of men and women farmers (e.g., participation by the poor in political processes and decision-making)
* Enhancing household food security
* Social inclusion includes access to knowledge, but if the context is not right or if farmers’ access is not inclusive (of the rural poor), then such growth will not lead to well-balanced development and certainly not to pro-poor development.
* Social exclusion leads to research and development agendas that do not address the priorities of the poor, resulting in constrained access by the poor to appropriate technology and, hence, to their exclusion from economic and social progress (Wennink, Nederlof, and Heemskerk 2007, p. 12).

**The push–pull strategy has had a significant impact on agricultural productivity and on increasing farm income**

For example, one should determine which organizations are best suited to carry out the following extension functions on a long-term basis:

* providing technical advisory services to all types of farmers for the major food crops
* helping small-scale farmers increase their farm income by diversifying their farming systems, including the introduction of high-value crops/ products
* helping farmers get organized into producer groups (i.e., developing social capital) to more efficiently supply urban markets with high-value food products
* improving the farm management and marketing skills of small-scale men and women farmers, and

inwreasing the use of sustainable natural resource management (NRM) practices

**Figure 7.6 Overview of Extension Planning and Implementing Procedures to Help Small-Scale Men and Women Farmers Improve Their Farm Household Income**

2. Identify innovative farmers and current/potential markets for high-value products; then conduct a SWOT analysis for each agro-ecological zone within a district.

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1. Conduct a PRA to assess the resources and needs of small-scale farm households.

9. Evaluate group outputs; determine next season’s plans; begin working with other producer groups.

8. Monitor and provide technical support during first production cycle.

7. Train farmers in different groups;

**Tactical** suitable high-value crops, livestock,

or other enterprises.

6. Organize exposure visits for group
leaders who are interested in specific
enterprises; decide whether enterprise is feasible.

extension strategy that will increase
farm household income.

4. Begin organizing men and women’s

groups; assess their needs

and constraints.

5. Discuss and identify the most

3. Work with farm leaders to develop an

 **Impact Indicators**

The rationale for each baseline indicator was described in Section 2, so those observations will not be repeated here. However, the overall purpose of these impact indicators is to determine whether specific improvements in the extension system (1) had a significant and positive impact on different crop, livestock, and other enterprises; (2) helped increase farm household income and rural employment; and (3) improved rural livelihoods among different

Socio economic and gender groups within rural communities. Correctly and accurately assessing these impacts is easier said than done, because the procedures used must be both econometrically and conceptually correct.

Each of these key impact indicators will be delineated in this section so that project impacts can be accurately assessed and so that the resulting findings will provide essential insights about how future extension projects should be prepared, especially in scaling up this model throughout the country and/or in making other improvements to the overall agricultural innovation system. Here is the recommended list of impact indicators needed to carry out a comprehensive evaluation of project impacts:

1. *Increases in Agricultural Productivity across Different Crop, Livestock, and Fishery Systems and by Different Categories of Farmers (Large, Commercial; Small- and Medium-Scale; Subsistence and Women Farmers)*
2. Increases in yields for staple food crops and other high-value specialty crops
3. Increases in livestock productivity (milk production per cow per year, egg production per layer per year, production time for broilers, etc.)
4. Increases in the yield of fish ponds (tons per area per year)
5. Increases in the productivity of other enterprises (e.g., beekeeping, mushrooms)
6. *Changes in Crop and/or Livestock Diversification and Increases in Crop and Livestock Intensification*
7. Increases or decreases in cropping area for different food, fiber, and high-value crops
8. Increases in number of animals (dairy cows, broilers, etc.) at the household and district level, including increases in fishery operations
9. Increases in cropping intensity due to the use of multiple and/or intercropping systems
10. Increased use of common resource property by rural women and landless farm households
11. *Changes in Farmer Skills, Knowledge, and Attitudes.* Improvement in farmer knowledge and skills is difficult to measure directly. Therefore, these output indicators will focus on several factors that may reflect how increases in farmer knowledge can directly affect farmer performance in increasing farm income. We will start with some obvious output indicators and then move into direct changes in farmer behavior (all types of farmers, including women) that reflect the acquisition of new knowledge and skills:
12. Number of farmers, including women, who directly participated in specific extension activities (i.e., output indicators, such as training courses and demonstrations)
13. Number of different categories of farmers (by socioeconomic status and gender) who

Joined and became active members of producer or farmer groups

* Began diversifying into and possibly expanding into new high-value crop, livestock, fisheries, or other enterprises
* Began using sustainable natural resource management practices
1. *Impact on Farm Household Income*
2. Changes in farm income due to increases or decreases in productivity for stable food crops and other on-going farm enterprises
3. Changes in farm income due to diversification into new high-value crops/products
4. Changes in farm household income due to new off-farm employment opportunities
5. Changes in farm household income due to access and use of common property resources (CPR)
6. *Impact on Off-Farm Rural Employment*
7. Increases in the number of post-harvest handling and value-added processing enterprises established within the district
8. Increases in the number of individuals who are able to secure off-farm employment within the district due to new post-harvest handling and value-added enterprises
9. *Impact on Rural Livelihoods*
10. Improvements in household food security and nutrition, especial for children
11. Increase in household access to education for children, especially for the rural poor
12. Improved access to health services
13. *Growth and Sustainability of Producer Groups, Farmer Associations, and Rural Youth Groups (Social Capital) at the Village, Subdistrict, District, Provincial, and National Levels.* This impact indicator should determine the following:
14. Number of farmer groups that were organized as a result of project inputs, as well as the number of groups that remained operational one or more years after being formally established
15. Expanded economic activities undertaken by these different farmer groups (for example, by expanding the production and marketing of specific commodities and/or diversification into new enterprises)
16. Percentage of farmers, including farm women, who are members of these newly established farmer organizations categorized by socio-economic group and gender (large-, medium- and small-scale farmers, plus landless and rural/farm women)
17. *Use of More Sustainable Natural Resource Management Practices*

a. Increases in the efficient use of surface and underground water resources, such as these:

* Increased use of water-efficient crops
* Increased use of water-saving (e.g., drip irrigation) and/or water-harvesting technologies
1. Improvement in soil fertility and organic matter levels
2. Reduction in soil erosion and land degradation
3. Reduction in the use of pesticides

9. *Sustainability of a More Decentralized, Farmer-Led, Market-Driven Extension System*

1. Policy changes concerning the decentralization of extension program activities. Have national and provincial-level extension officials accepted this decentralized extension management structure, or are they attempting to regain control over program priorities and/or resources?
2. Increases in the availability of government resources to
* Maintain or expand extension program activities
* Maintain or expand in-service training and educational activities
* Maintain or expand the ICT system
1. Changes in attitudes of different stakeholder and shareholder groups concerning this new decentralized, farmer-led, market-driven extension system
* Are medium- and small-scale farmers, including subsistence and women farmers, satisfied with and supportive of this new decentralized extension system?
* Are other stakeholders (NGOs, banks, private-sector firms) satisfied with and supportive of this new market-driven extension system?
1. Willingness of farmers and/or farmer groups to begin paying for specific advisory services, such as some of the costs associated with
* Exposure visits for farm leaders
* Farmer training courses for group members
* Obtaining technical and/or marketing information services
* Establishing new crop or livestock systems or other enterprises