

BEST PRACTICES OF INTGRATED RURAL DEVELOPMENT (IRD) POLICIES

February 28, 2023

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CIRDAP

PRESENTATION SEQUENCE

- Introduction to Integrated Rural Development (IRD)
 - Concept, Characteristics, Development Perspective, Objectives, Components, Rural Development Approaches & Strategies, Types of Integrated Rural Development (IRD), Problems & Rural Economy
- Agriculture
 - World Demographics, Agri Land (Continent Wise), Agri in Asia & Agricultural Challenges in Developing Countries
- Modern Technologies
 - ICT, GIS and Data Management
- Suggested Model / Way Forward for IRD through ICT (KP Example)

INTRODUCTION

Rural:

 US Census Bureau defines rural as "any population, housing, or territory NOT in an urban area".

Rural Development:

 Rural development is the process of improving the quality of life and economic well-being of people living in rural areas, often relatively isolated and sparsely populated areas

Integrated Rural Development (IRD):

 IRD is the process of combining multiple development services into a coherent delivery system with the aim of improving the well-being of rural populations

RURAL DEVELOPMENT



CHARACHTERISTICS OF IRD



DEVELOPMENT PRESPECTIVE



OBJECTIVES OF IRD



COMPONENTS OF RURAL DEVELOPMENT



STRATEGIES OF RURAL DEVELOPMENT

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MULTIPURPOSE STRATEGY	GROWTH ORIENTED STRATEGY	TARGET GROUP STRATEGY	AREA DEVELOPMENT STRATEGY	SPATIAL PLANNING STRATEGY	INTEGRATED OR HOLISTIC STRATEGY	PARTICIPATORY

TYPES OF IRD



PROBLEMS OF RURAL DEVELOPMENT



RURAL ECONOMY



AGRICULTURE

WORLD DEMOGRAPHICS



AGRICULTURAL LAND (CONTINENT WISE)

Global Agri Land= 5 Billion Hectares (Approx)

-- Agricultural land by continent, Area

Average 1961 - 2020



AGRICULTURE IN ASIA

- 1.67 Billion Hectares of Agricultural land in Asia
- 2.2 Billion+ peoples rely on Agriculture for their livelihood
- 90% of Rice production and consumption in Asia
- 90% Water Consumption in Agriculture
- About 11 of 19 world megacities with more than 10 million inhabitants are in Asia
- Global cropland capita is decreasing i.e. from 0.45 hectare per capita in 1961 to 0.21 hectare per capita in 2016, Asia has the lowest 0.13 hectares per capita

AGRICULTURAL CHALLENGES IN DEVELOPING COUNTRIES

1. Investment Challenges

 Low On/Off Farm Output, Small Land Holdings, Lack of Market Oriented / Demand Driven Agriculture, Lack of Infrastructure, Limited Financial Services and Accessibility, Private Investment & Crop Insurance etc.

2. Social & Cultural Challenges

 Underemployment, Food / Dietary Habits, Population Pressure, Limited Business Opportunities, Low Literacy Level, Gender inclusive actions, Injudicious use and distribution of food resources, Lack of Agri-Business Mindset & Diversification & Less Adoption to Modern Technologies

3. Governance Challenges

• Weak Linkages & Coordination, Pressure on Natural Resources, Expropriation of Agricultural Lands, Trained HR, Regulatory Issues and Trade Problems

4. Research & Extension Challenges

 Climate Change, Limited Capacity of Public Organizations & Limited use of Modern Technologies

MODERN TECHNOLOGIES (ICT, GIS and Data management)

TELEFARMING SYSTEM OF AGRICULTURE DEPARTMENT KHYBER PAKHTUNKHWA, PAKISTAN

TELEFARMING SYSTEM



INTERVENTIONS

- 1. Farmer Tele Facilitation Center (Call Center)
- 2. Web Portal (www.zarat.kp.gov.pk)
- 3. Mobile Application (Agriculture Extension KP)
- 4. Management Information System (MIS)
- 5. Agri. Info (SMS Service)

AGRICULTURE EXTENSION KP – CALL CENTER





AGRICULTURE EXTENSION KP - WEBSITE



Zaraal Nama

Publications











Compost Preparation

FA Extension Activities

Fruit Production

Insects Diseases Identification 23

AGRICULTURE EXTENSION KP - DASHBOARD



AGRICULTURE EXTENSION KP - MOBILE APP



CURRENT STATUS

- Tele-Farming system Established at Bureau of Agriculture Information under the Project "Piloting Innovative Ideas, Establishment of e-Agriculture & Tele-Farming System"
- 0.65 Million Farmers Registered with the System
- 120,000 + No Farmers Issues Received and Resolved
- 10,000 + Downloads of Agriculture Extension Android Application
- Millions of Text Messages/Robo Calls to Farmer on Technical Issues, Weather Advisory Market Information etc.

OBJECTIVES

- Enhance productivity by improving:
 - Technology Dissemination
 - Trade Promotion
- Improve food security
- Reduce poverty
- Enhance role of women
- ICT based monitoring & tracking system for enhanced services delivery

OUTCOME (RURAL DEVELOPMENT)

Improved Technical Knowledge	Improved Coordination	Improved Crop Yields
Farmers Organizations	Improved Linkages for Farmers Prosperity	Improved Services in JVs (Public Private Partnerships)

METHODOLOGY



ICT BASED EXTENSION SERVICES



ICT BASED REPORTING

Concerned Field Staff will report their relevant reports via print and ICT District Director Agriculture Extension will report the district level activities to the DGAI / PD and PMU Director Agriculture Information will provide ICT based reporting support to DGAI / PD /PMU

MONITORING MECHANISM

ICT Based Monitoring

- Field staff monitoring
- Online Monitoring System
- Realtime
- Digital Reports (No. of samples taken, farmers advised etc.)

Physical Monitoring

- District Director, Project
 Director / Director General
 Agriculture Extension /
 PMU and the Directorate
 of M&E (P&D Department)
- Process, progress and quality review

PROPOSED ICT SOLUTIONS



Human Resource Management System (HRMS)

Organization Structure, Hierarchy, Recruitment, Staff Records, Placements , Attendance Management



Field Resource Management

Farmer's Directory (Registration), Digital Reporting, Workshop Management, Real Time GIS-based Monitoring, Model Farms Management, E-Library, Drone Tech., Image & Video Analysis



Project Management, Joint Venture Tracking, Labs Info. Management Farmer Feedback & Survey System, Interdepartment Communication

-mento



Advisory & Social App, Call Centre, Magazine, Website, Social Media Info. Propagation

INTEGRATED/ENCRYPTED/INTERNET OF THINGS (IoT's)

SOIL FERTILITY MAPPING

- Strengthening of Soil Testing Labs at MFSC's (25 No)
- Farmer Registration on Android Application
- Collection of Soil Sample by Agri: Extension (From every 10 Acres i.e. 450,000 No)
- Sample Analysis
- Digitizing Labs and Connecting to Main Server at BAI
- Provision of Analysis Report and Guidance on Efficient Use of Fertilizer to Farmer (ICT & Print)
- GIS Mapping / Land & Crop Zoning

Proposed e-Agriculture Ecosystem

Agriculture Information Systems & e-Agri Services



USE OF ICT IN EMERGENICIES

LOCUST CONTROL

USE OF ICT & GIS BASED TECHNOLOGIES



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Issue R	epon	
mayes		
Azak, chowdhy	wan, jandi, babar, mus	azai, garrah
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Area covered		
15 km surveye	d	
Pesticide used	d for spray	
Nil		
Spray quantity		
Nil		
Line departme	ents	
Only agricultur	e extension departme	ent conducted
survey		
Aman U Subject N	Illah Khan (SMS PP) Matter Specialist	2020-01-28
Activities		
Survey of locus	st area for target.	
Identification of	on infestation.	
District	Tehsil	
D.I.Khan	Paroa	
Villages		
Kirri shamozai	, potah, dhani, khoi, ba	ahara, mangal
Area covered		
25 km surveye	d	
Pesticide used	d for spray	
NIL		
Spray quantity	6	
NIL		
Line departme	ents	
Only agricultur survey	e extension departme	ent concert
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LOCUST CONTROL



SURVEILLANCE THROUGH DRONES

- Working on Development of Surveillance Drones
- Surveillance in In-Accessible Areas
- Fast Surveillance
- Cost Effective





USE OF GIS TECHNOLOGIES

Inunduation Map 2022 Khyber Pakhtunkhwa



Data Source:

Sentinel-1 SAR(synthetic Aperture Radar) C-Band





Over All Kharif Crop Damage. Satellite Imagery of Khyber Pakhtunkhwa

Data Source:

Sentinel-2 Multispectral Instrument level-2A

Kharif Crops under Flood near by River Kabul 29 August 2022



Maize Crop

Rice Crop

Sugarcane

Agriculture Land+ Settlement under Flood

1297.8 Ha

90.42 Ha

360.36 Ha

Maize Crop

Rice Crop

Sugarcane

1988.93 Ha

119.43 Ha

655.91 Ha

34°0'0"N

Standing Crops under Flood

Rice Crop

Maize Crop

SugarCane Crop

Charsadda Boundary

Nowshera Boundary Before Flood River Kabul Extent **Remote Sensing & GIS Research Lab Crop Reporting Services** Khyber Pakhtunkhwa

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