



PROJECT PROPOSAL

- Project Title** : **Regional Training Programme on Geographic Information System (GIS) and IT (Information Technology) Applications for Rural Development**
- Project Duration** : Two weeks
- Implementing Agency** : Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) in collaboration with the sponsoring agency
- Country Coverage** : Afghanistan, Bangladesh, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam
- Budget** : US \$ 51,327 approximately
- Venue** : To be decided
- Funding Agency** : To be identified

Introduction

CIRDAP member countries are confronted with major challenges in framing policies and actions for rural development in realizing the Millennium Development Goals (MDGs). A need was felt for sustainable commitments and programming for pro-poor policies and actions. Since poverty is still a big human problem, it requires proper integration of human, technological, and institutional interventions to ensure sustainable use of natural resources and the environment. In this respect, information sharing on GIS and IT applications for rural resource development and capacity building have been found to play a potential role in promoting natural resource productivity for sustainable development and IT applications for good governance and service delivery to the poor. Some new software packages like tele-medicine application in rural areas, computer based curriculum and teaching aids in primary schools, land records computerization,

watershed development through space technology, etc. proved to be useful which can be shared for the benefit to others and it can be .

The Geographic Information System (GIS) has emerged as an effective tool in designing rural development programmes, with focus on sustainable poverty reduction and environmental conservation. The recent trend is to move towards convergence of Remote Sensing, Geographic Information System, Global Positioning System, and related communication technologies to better manage the natural resources and the environment for achieving economic and social goals. With rapid advances, these technologies are now widely accessible at affordable costs. The GIS, has already created an enormous impact on virtually every field of activity that requires management and analysis of spatially distributed data.

Similarly, the IT applications in rural development has become successful and experiences like 'Gyandoot' connecting the rural cyber-cafes catering to the needs of rural masses or the wired villages, a model solution framework, at village level, the land records management, community information centers have helped to promote a social entrepreneurial model. These experiences have become key learning electronic governance initiatives. CIRDAP has been instrumental in organising programme for sharing rich experiences among its member countries.

Application of GIS in Rural Development

Some countries in the region have significantly progressed in this direction, but others are yet to take off. Some information on some countries will suggest how useful this training programme is for CIRDAP member countries. Some countries like India have done pioneering efforts in this particular field both in GIS and IT.

In **India**, the use and development of GIS packages are on par with international standards and packages. The GIS techniques are extensively employed in a number of rural development fields including area planning, spatial analysis of data and programming. NIRD, under the Ministry of Rural Development has initiated application of GIS for micro level planning and is a meeting place to discuss issues in watershed management.

In **Malaysia**, GIS technologies are used in capturing, compiling, updating and managing spatial and non-spatial data related to soil and land-use. The GIS application has been found

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very effective in delineating suitable areas for agricultural and rural development programmes at the National , State and Regional levels. The Malaysian Agricultural Research and Development Institute (MARDI) has carried out several studies on application of satellite RS data and GIS for agro-ecological mapping; soil characterization and survey; land cover mapping, changed detection and monitoring; and crop yield prediction. These results are effectively used in determining the suitability of existing land use to agro-ecological conditions, updating land cover information at State or watershed levels and are found useful in soil survey works, especially for planning the field work and delineation of mapping units. The satellite data are also found very useful in mapping oil palm stand age for prediction of forage availability for integration of livestock production with oil palm plantation. MARDI study on application of GIS in inventoring agricultural land resources aims to identify potential areas and establish procedures for more extensive uses.

In **Thailand** Remote Sensing Centre for Agricultural Resources (RCAR) under the Ministry of Agriculture and Cooperatives is entrusted with the responsibility of establishing a GIS for agricultural development planning. The GIS has been increasingly adopted in national economic and social development planning e.g. production of Agricultural Zoning Map, Land Utilization Map, Basin Map, Soil Map, Forest Map, Transportation Map, Administration Map and Existing Land Use Map, etc.

In **Bangladesh**, the Space Research and Remote Sensing Organization (SPARRSO) and the Local Government Engineering Department (LGED) have been playing a pioneering role in promoting GIS technology in various fields in rural and agricultural development. The LGED has effectively used the GIS in infrastructure planning and local area development planning in order to enhance the effectiveness of rural development interventions. In **Myanmar**, different organizations and agencies use GIS, in land settlement and land records, and for developing irrigation facilities and network. But due to technological and financial constraints, and in spite of best intentions, the usage of GIS is not up to the mark. There is a felt need for training and to improve its infrastructure.

However, in a majority of CIRDAP member countries, the application and usage of methods is still in its infancy as the infrastructure is not fully developed. While the above gives a birds eye view of the Region in areas where the technologies have been profitably used in promoting rural development, there exist many other areas where the potential benefit of the

technologies are yet to be tapped. In broad terms, these include natural resource-based applications (e.g. forest management, wildlife habitat management, recreation resource planning, environmental impact assessment), facilities management (locating underground resources, planning facility maintenance), land-parcel based application (e.g. zoning, land acquisition) and street net-work based applications (e.g. site selection, development of evacuation plan). Also there seems to exist substantial variation across the countries of the Region in terms of their achievement in harnessing the benefit of the GIS based programmes. Some countries, like India, can share their expertise to other CIRDAP member countries.

Information Technology (IT)

The application of successful tools are in the realm of knowledge and information availability to the general public. In spite of key challenges like rules, access to information, infrastructure, skills and awareness, coordination, etc., some countries, are surging ahead to bring IT to the door steps of villagers. Examples like, community marketing information, landholding pass books, a cluster of villages wired to provide agricultural, medical, educational etc. information and for milk marketing, community information centers, for government – citizen interface are great experiments for sharing of experiences and encouraging them for better delivery of rural services. This would encourage others to move from islands of success to widespread adoption. This is a sure way of integrating rural areas with globalisation process and encouraging rural people to integrate themselves in to a new market approach, to achieve MDGs.

CIRDAP, in its efforts to assist the countries of the region in promoting sustainable rural development, has been pursuing activities that can create mechanisms for integration of human and institutional dimensions with technological innovations. With increasing acceptance and application of the GIS and IT in management and planning of rural development programmes and projects in many countries, it would be mutually beneficial for the countries in the Region to identify innovative approaches. These technologies can play a vital role in managing natural resources, the environment, as well as effectively targeting these policies to combat social issues (e.g. poverty mapping), and share mutual concerns.

In this backdrop, CIRDAP proposes to organize a few training programmes for policy makers and implementers in a regional context, so that experiences and problems can be shared, examined and analysed and appropriate follow-up actions devised both at the regional and the country levels. Such experiences would go a long way in shaping policies at the regional (Asia-Pacific) level.

Objectives

Specific:

- (1) To examine the linkages between policy and practice in development, particularly in rural development, natural resources management and environment in the countries of the Region, review current use of the GIS and IT in rural development, and identify the potential areas where the GIS and IT related applications can play an effective role;
- (2) To exchange ideas and experiences in formulating and implementing the GIS/IT technologies, assess the feasibility of meeting the regional needs based on existing manpower, software, hardware and data availability and assess the training needs and resources requirements at the country level;

General:

- (3) To promote effective networking among the relevant institutions in the countries of the region and to address common rural development issues and promote information sharing and for South-South cooperation;
- (4) To present case studies on application of the GIS and IT in specific areas for dissemination at the regional level; and
- (5) To strengthen capacity building efforts of member countries through training so as to accelerate rural development and poverty reduction in the region to achieve MDGs.

Participants

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Participants will include all CIRDAP Member Countries viz., Afghanistan, Bangladesh, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. The participation will be at a senior level which will permit policy recommendations and commitment to actions or acceptance of follow-up responsibility. The number of participants will be around 25, including CIRDAP coordinators.

Structure and Outline

specific areas in rural development planning, including watershed planning and management where the application of GIS technologies would be most effective and work out specific proposals for follow-up actions. The IT related to rural development will be the software packages and practical field visits.

Professional inputs will be provided by resource papers and country level statements on the themes and subjects.

Field study out side the venue to have hand on experience of rural development projects.

The participants from the countries will present country statements. The presentations and discussions on different aspects of the subject will provide the opportunity for identification of the common problems and issues to be addressed. The contents proposed relevant to the needs of CIRDAP Link Institutions to be covered are as follows:

(1) GIS Applications

(Wastelands Development, Delineation of Watersheds, Natural Resources Mapping, Land Use, Ground Water Potential, Forest Management, Fisheries Development, etc.)

(2) Watershed Development

(Integration and GIS, Water Harvesting, Afforestation and Social Forestry, PRA and NGO Participation, Implementation, Monitoring and Evaluation)

(3) Wasteland Development

(Wasteland Mapping, Integrated Wasteland Development, Implementation, Monitoring and Evaluation)

(4) Rural Water Supply

(Rural Water Supply, Drinking Water Technology, Groundwater Targeting, Water Contamination, Water Quality, Pollution Control, Sustainable Yield from Sources)

(5) Sustainable Rural Development

(Assessment of Needs and Priorities, Resource Inventory, Efficiency, Beneficiary Participation, Sustainability, Pro-Poor Interventions, Methodological and Organisational Issues).

(6) IT Application

(e-governance, Information, e-citizens, e-services, key challenges, case studies, and visits to projects)

With a detailed examination of the above themes and related issues the training programme will lead to a greater understanding of:

- ◆ scope and potential of GIS and IT technologies in promoting rural development;
- ◆ current level of application in different areas and potential to expand to other areas;
- ◆ implementation actions at country levels;
- ◆ specific training and capacity building needs;
- ◆ required actions at national and regional levels – policy and guidance support;
- ◆ information sharing and networking.

The training programme will assist the CIRDAP member governments in enhancing the efficiency as well as sustainability of rural development programmes in the Asia Pacific region. This will be achieved through practical hands on training/study visits.

Duration

Two weeks.

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Date

Some time during the year 2010 in consultation with the sponsoring agency.

Budget Estimate

	<u>(in US\$)</u>
1. Travel Costs for member countries at the average US \$ 900 per participant for 25 persons	22,500
2. Travel Costs for resource persons	3,000
3. DSA for 25 participants @ US \$ 30/day for 15 days	11,250
4. Field visits outside the venue (Transport, boarding, lodging, organizational costs for 3 days	4,422
5. Organisational costs (boarding/lodging, guests speakers travel/honorarium, materials, utilities and other facilities	8,155
6. Honorarium to Course Director	1000
7. CIRDAP's overhead (covering communications with member countries, publication and distribution of reports, etc.)	1000
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Total:	US \$ 51,327

Output

1. Sharing of expertise among member countries in Asia Pacific for networking and future collaboration in Rural Development efforts of member countries.
2. Support to the capacity building efforts of Asia Pacific region, through knowledge dissemination through CIRDAP.
3. To create better institutional and governmental linkages in the region and to fulfill the mandate for poverty reduction and enhance regional cooperation.

CIRDAP