

DRAFT

ACTION PLAN

(2017-2022)



**North Eastern Regional Institute of Water and Land Management
(NERIWALM)**

An Institute under the Ministry of Water Resources, Govt. of India
(Registered under Society Registration Act, 1860)

DOLABARI, TEZPUR – 784 027

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Introduction

Ministry of Water Resources (MoWR), RD & GR has taken over the North Eastern Regional Institute of Water and Land Management (NERIWALM) on 1st April, 2012 from North Eastern Council (NEC), Shillong. Consequently, the institute has to be administered by MoWR and the required fund will also to be given as grant- in-aid on year to year basis. For re-orientation of the institute's activities which is a registered Society, this plan is prepared. Due care has been taken in spelling out the aims and objectives, training, field research, consultancy services of the institute so that they are aligned to different schemes and programmes of MoWR, RD & GR. The National Water Policy, National Water Mission Documents and other available guidelines of the MoWR, RD & GR were duly considered for drafting the action plan . The region specific conditions on soil, water, crop, flood, erosion, environment, legal and sociological aspects are kept in the back drop in formulating the proposed technical activities.

The activities include conduct of training, seminars, workshops, conferences, field research projects and experiments, consultancy services etc. keeping in mind needs, challenges and concerns in water sector. In North Eastern Region, the eco systems and water and land management scenarios are having their own peculiarity and hence they have also taking care off. Specific programmes are being drawn up for benefit of the tribal population as it is a justified need to extend additional benefit to them and is within the policy of Govt. of India. Separate budgetary provision will be proposed for works in tribal areas in framing the overall budget so that, such aspects are not neglected or minimized due to lack of financial resources.

The action plan has been prepared with a perspective up to 2022. The plan has been presented in 8 sections ,namely, introduction, aims and objectives, academic programme, challenges, opportunities, goal and target, way forward and action plan focusing on the following vision and mission:-

Vision:

To empower human resources for promoting effective management of water and land resources to ensure and promote participatory management

Mission:

Capacity building of in-service personnel in central and state departments, water users' associations, farming community etc. for co-ordinated and planned development of water and land resources and their subsequent management.

Goal:

- i. Provide all kinds of services and support for the development of ultimate irrigation potential.
- ii. Extend services to bridge the gap between potential created and utilized and increase water use efficiency and promote PIM, innovative water saving technologies.
- iii. Motivate and promote basin level planning on IWRM principle.
- iv. Motivate and promote increasing cropping intensity.
- v. Sustainable management of land resources.

Aims and Objectives

The objectives mentioned in the Memorandum and Articles of Associations (MoAA) of NERIWALM Society which was registered in 1989 is reproduced below:

- (a) With a view to promoting advancement of science and acquisition of scientific knowledge to provide instruction / and training in all branches of science, both theoretical and applied, and in particular in Water and Land Management for Irrigation and Agriculture.
- (b) To establish an institute for imparting instructions and training to farmers, members of Water Users' Associations and conducting research in Water and Land Management for Irrigation and Agriculture.
- (c) To prescribe courses for instruction and training in Water and Land Management for Irrigation and Agriculture and hold examinations and grant certificates, diplomas etc.
- (d) To seek affiliation of the said Institute with Universities and other appropriate academic bodies both in India and abroad and to obtain recognition of the said courses conducted at the said Institute and for the said examinations conducted by the Institute and diplomas, certificates, etc.

- (e) To provide consultancy service to the Government, Local Bodies and other organizations in Water and Land Management for Irrigation and Agriculture.
- (f) To undertake research and conduct experiments in various aspects of Water and Land Management and to collaborate with other organizations for research and Development.
- (g) To send within the country and abroad for specialized training in Water and Land Management for Irrigation and Agriculture, persons including members of staff of the said Institute and bear and pay the costs of such training.
- (h) To network with non-governmental organizations (NGOs) /private partners (PP) with a view to carrying out outreach activities effectively at the grass root level.
- (i) To start, conduct, print, publish and exhibit any magazines, periodicals, newspapers, books, pamphlets or posters that may be considered desirable for the promotion of the objectives of the Society.
- (j) To invest and deal with for funds of the Society.
- (k) To make rules and bye-laws and to make and perform such things for the conduct of the affairs of the Society and the Institute and from time to time add to, amend, vary to rescind them.
- (l) To invest and deal with for funds of the Society.
- (m) To make rules and bye-laws and to make and perform such things for the conduct of the affairs of the Society and the Institute and from time to time add to, amend, vary to rescind them.

For the purpose of action plan the important objectives are para phrased are given below as aims and objects.

1. Conducting capacity building programmes
2. Conducting training needs assessment
3. Conducting field research
4. Providing consultancy services
5. Focused programmes benefiting tribal populations
6. Offer academic programme in land and water management.
7. Collaboration arrangement for better impact of the activities under the above mentioned aims and objects.

Academic Programmes

A. Medium and short term training courses /seminars, workshops, conferences

i. Water resource management

The medium and short training courses on broad group of water resources will consist of the following themes:

- a. Major and medium sector
- b. Minor irrigation and watershed management sector
- c. Ground water sector
- d. IWRM and river basin planning
- e. Water saving technology including micro irrigation
- f. Environmental management
- g. Participatory Irrigation management

ii. Crop and soil management

Similarly in the broad group of crop and soil management will consist the three following themes:

- a. Crop planning and crop management
- b. Soil health management
- c. Crop water management

iii. Sociology

Similarly in the discipline of sociology the two following themes will be covered:

- a. Participatory rural appraisal
- b. Social and legal aspects of water resources projects

iv. Others

- a. Use of ICT in project and data management
- b. Training for students (M Tech/B Tech) and other professional courses in the related disciplines.

B. Long term courses –

- a. Offering Post Graduate degree/diploma course with affiliation of recognized universities.

C. Training of Trainers (ToT) programmes

- i. Water resource management
- ii. Crop water management

D. Field research :

This is an integral component of a training institute like NERIWALM. The field research will be carried out with funding from institute budget. Besides, the institute budget research can be taken up by getting sponsorship from many organisation. It supports in improving the training contents in a continuous manner.

E. Publicity Materials on institute activities etc.

F. Setting up of “State/Field Centres” at key locations of NE region.

Challenges

ISSUE I: Water Use Efficiency in irrigation schemes

- i. Most irrigation potential is not utilized
- ii. Water distribution system is not adequate
- iii. Canal operation plans are not prepared
- iv. Water user associations are not effectively functioning
- v. Cropped field are fully not developed with proper land leveling etc.
- vi. Improper drainage
- vii. Mismatch between water supply and water demand
- viii. Wasteful methods of water application
- ix. Scientific methods of water saving including micro irrigation are not adopted

ISSUE II: Integrated Water Resource Management (IWRM) and basin level planning

- i. Basin level plans are not available for any basin, canal, catchment, sub-catchment prepared on IWRM principles.
- ii. Soil erosion and Landslide are common in the region
- iii. Catchment area treatment plans using watershed concepts are not prepared
- iv. Floods are recurrent.

- v. Streams are tapped at different locations for irrigation, drinking, industries, without any coordination and consideration of water availability particularly in the lean season
- vi. There is no holistic development plans to achieve the full potential of basin water resources.

ISSUE III: Water Conservation, augmentation and preservation

- i. Lot of rain water drain out to rivers and ultimately to sea without harnessing
- ii. Ground water utilization in valley areas is very low
- iii. Lots of water bodies like beels, wet lands are in the region which needs to be preserved.
- iv. Conjunctive use is to be promoted
- v. Creation of awareness among the citizen and society on water conservation.
- vi. Plan for augmentation where the projects are not able to cover the designed requirement

ISSUE IV: Water wastage in irrigated field

- i. Water requirement are not known
- ii. Irrigation schedules are not followed
- iii. Large runoff and percolation losses

ISSUE V: Environmental Issues

- i. Catchment of water projects are subjected to degradation
- ii. Lack of EIA and EMP studies
- iii. Absence of reports and literatures on environment management plan and environment related data.
- iv. Water is contaminated with iron, arsenic, fluoride and agrochemicals and high sediment load
- v. Water resources development projects are very less and environmental clearance is taking more time due to inadequate studies
- vi. Acid mine drainage contamination and land degradation through mining activities
- vii. Sand deposition and sand casting due to sedimentation in flood water
- viii. Changing of river courses in some areas

ISSUE VI: Crop Planning and Crop Management

- i. The region is known for dominance of mono crops areas
- ii. Cropping patterns with multiple cropping for different location specific area are not in practice
- iii. Farming system with mix of crops, livestock, fishery etc. are not practiced widely
- iv. Less area coverage under HYV and hybrid varieties of paddy

ISSUE VII: Soil health

- i. Soil is acidic in nature
- ii. Balanced application of fertilizer not popular
- iii. Lack of awareness on soil health parameters, soil care and nutrient management practices.
- iv. Soil testing is not very popular among farmers

ISSUE VIII: Sociological and legal aspects

- i. PIM acts are not enacted in all states. Few states like Assam and Sikkim have enacted PIM acts but rules & appropriate executive instructions are not issued to enforce and implement the acts
- ii. Water User Associations (WUAs) are indifferent to irrigation projects due to lack of motivation and involvement.
- iii. Conflict among members of water user associations within a WUA and among WUAs in a canal
- iv. Water User/farmers still practice traditional cultivation practices, and often resort tampering of outlets, structure and canals
- v. Less awareness on the benefits of water management among the young farmers
- vi. Lack of women participation in decision making in water resource development, water resources management, crops management and soil health management at the villages or Gram Panchayat.

Opportunities

A well-trained technical manpower is a pre-requisite for effective planning and execution of land water management programmes. Well-informed community will adopt new technologies and strengthen the process of natural resources conservation along with increased productivity to meet the future challenges of food security and ecological sustainability . Thus, there is a strong need to build the capacity of all the stakeholders to facilitate the most efficient decision making leading to conservation and sustainable use of land and water resources. . This invariably would need concerted efforts in up-scaling the training facilities and infrastructure to provide quality training material and services. Focused attention is required in organising more and more skill development trainings on land & water conservation techniques. Considering geographical and socio economic similarity between NE region and south east Asian region , such capacity building programme can be extended to South East Asian Region .

The NE region is rich in water resources. In the research focus of NERIWALM will be on efficient as well as productive utilization of available water both in terms of food per unit of water and energy requirement, waste water utilization, sustainable and quality recharge of ground water, reduction in water use of crops and productive utilization of land and water resources in challenged eco-systems. The effort to take on these challenges will be substantially facilitated by advances in material science, bio-technology, electronics and geo-informatics which will alter the scenario. Few developments that will tested are : sensor technology along with communication technology for improving efficiency in surface irrigation system , which will help demand and supply management on real time basis in canal system and also for pricing. Problem of adoption of pressured irrigation system in NER will be dealt with industry collaboration.

In view of share of ground water irrigated area , particularly in plains of Assam, Manipur and Tripura ,testing of devices and improvement in efficiency of water lifting devices/equipment is needed to reduce cost of cultivation and conserve energy.

Innovative farming practices, primarily comprising agro-forestry have tremendous scope of increasing productivity and conservation of natural resources in NER through agri-silvicultural , agri-horticultural, and silvi-pastoral practices. Conservation agriculture /

horticulture technologies like organic farming, mulching, tillage and canopy management hold a great promise towards increasing productivity of all primary production systems, and they need to be evaluated in new micro-environments in different agro-climatic regions of NER. These technologies need to be dovetailed with different farming practices for wider adaptability on watershed basis. Technologies related to soil erosion, alternative land use systems, diversification, biodiversity (ecological succession), vegetative barriers, bio-remediation and have been investigated in other places. However, their impact on sustainable production has to be fully realized under farmer's field conditions in NE region.

Goals and Target

The goal of NERIWALM will be to build capacity of community and develop a range of location/region specific land & water management technologies having global acceptance. To achieve this NERIWALM will aim for following :

- 1) Build capacity of the stakeholders for
 - a) Efficient surface irrigation methods and small holder centric watermanagement practices to improve irrigation efficiency.
 - b) Efficient pressurized irrigation methods and fertigation protocols for different crops to achieve more output per unit of water by pressurized irrigation system.
 - c) Enhancing water productivity of rainfed ecosystems through rain water management, alternate land use system/ farming and multiple use of rain water.
 - d) Improving water productivity of challenged ecosystems including waterlogged and rainfed areas.
 - e) Low cost, simple electronic devices for water application and irrigation scheduling.
 - f) Expert system/decision support system for efficient water management.
 - g) Eco restoration with focus on rainfed, marginal, fragile and degraded areas to check land degradation and their effective utilization.
- 2) Policy support and working strategies for mitigation of land and water related issues in the changing climate scenario.
- 3) Improve the performance of water lifting devices and reduce energy consumption of pressurized irrigation system.

- 4) Institutional mechanism for water governance with inbuilt flexibility to adopt changing socio-economic scenario.

Way forward

NERIWALM is committed to provide capacity building , research and policy support to the NE region in the area of land water management and eco restoration . The support may be extended to other geographically similar areas in the country and/or abroad. Activities to achieve the stated goals is described as follows.

1. The major effort to achieve land water management related objective is its manpower whose skills should be upgraded in a continuous manner. The capacity building and skill up gradation programme of stakeholders both at government level as well as communities, service providers, WUAs, NGOs etc will be upscaled to make them ready to take up new challenges. The road map for the next five years will lay special emphasis on exploring the potential of challenged ecosystems in terms of enhanced productivity as well as new livelihood opportunities without degrading the land water resource base. A detailed training need assessment and a systematic comprehensive training calendar will be formulated.
2. At international level, collaboration will be established with Wageningen University, The Netherlands, CEBAS-CSIS, Murcia, Spain for waste water utilisation. Collaborative projects will also be explored with organizations like IWMI, IRRI, ILRI, USDA .
3. Success of land water management technology depend on a whole set of institutional arrangements and the willingness of line departments as stakeholders to comply and enforce and/ or change the rules under evolving circumstances. Effective water governance and policies hold a key for the successful implementation of technological interventions/ innovations and its adoption by the farmers. As use of productivity enhancing inputs in agriculture is often influenced by the available irrigation water regime, the other extension services need to be complemented for implementing efficient crop planning, synchronization of farm operations, linking farmers to other sources of knowledge, support and services and establishing effective forward and backward linkages. Similarly Common Property Resources (CPR) and eco-system service provided

- by the water resources are essential component of the sustainable water resources management. There is a strong need to strengthen the linkages among the CPR, ecosystem services, markets and policies through systematic studies.
4. Networking of development departments, WUAs, Policy makers, Institutions, KVKs, and NGOs with NERIWALM for sharing of information and expertise in a better manner, the institute will strive hard to establish effective functional linkage mechanism to achieve this goal.
 5. Development of technically sound, economically viable, environmentally non-degrading and socially acceptable strategies for conservation, management and efficient utilization of regions' land, water, and human resources to improve livelihood options would be the ultimate aim of future research endeavours of NERIWALM. Research in the following areas are planed
 - i) Rainwater harvesting measures and recycling with micro irrigation
 - ii) Development of groundwater recharge measures with due emphasis on water quality dynamics
 - iii) Amelioration of ground water contamination.
 - iv) Convergence for corporate social responsibility initiatives
 - v) Disciplinary integration in research will be promoted through establishment of Advanced Skill Development Centre- A Centre of Excellence for capacity building and refinement in land - water management and eco restoration technologies.

Action Plan :

The strategies within the ambit of capacity building and field research to address issues and concerns are as follows:

i. Training needs assessment: The training programmes are envisaged to cover targets groups like in – service personnel both in the officers grade and field level functionaries, members of water users association, watershed associations, farmers groups (field management committee) etc.

Assessment of training needs of different target groups will be made following prescribed procedure and methods. From these assessments training plan will be evolved.

ii. The strategy spelt out includes.

- a. Training for three categories of groups such as officers, field functionaries, water users association and farmers.
- b. Duration of courses
 - short term course 2 to 5 days,
 - medium terms course 7 to 15 days ,
 - long term course above 3 months.

The courses may be conducted both as “**In campus**” and “**Off campus**” training programmes.

- c. Training calendar and number of courses per year:
 - Year wise training calendar will be prepared in due consultation with the departments and organizations where the target groups are employed.
 - Out of the total training proposed per year, about 60% training for officers, 30% for field functionaries and 10% for WUA and farmers etc. will be conducted.
 - Medium term course per year - 02 nos.
 - Long term course per year – 01 no.
 - Short terms course per year – 30 nos.

Total - at least **45-50 nos.** per year

Besides, the B. Tech students can be imparted industrial training which is a compulsory part of their course system.

- d. Title of trainings and tentative contents will be updated from time to time. The Board of Studies of NERIWALM will deliberate on the contemporary requirement of the contents of training, findings of training need assessment and formulate training modules.
- e. Except for the degree/diploma courses all training will be offered free of cost.
- f. Certificate, lecture note compendium and training materials as applicable for the course will also be given free of cost.
- g. Impact evaluation of training programme

- During the training, a system of evaluation of training which quantifies the minimizing of knowledge gap during the course evaluation after the officers and staff implement the ideas received through the training after lapse of 6-12 months time from the date of completion of training. This evaluation will be done by NERIWALM by obtaining feed back from the sample of trainees to be chosen during the training. The results of evaluation will be compared with the gaps identified in training needs assessment for deciding modification of strategies.
- h. For conducting all the training programmes resources including guest faculty, infrastructures facilities, field visits, coordination and linkage will be made with other training institutions and other organizations where resources are available.
- i. Events like seminars/workshops/conferences will be organized to document the status, impact of ongoing programme and goals on different focused areas of government of India. Some of the focus area could be
 - Efficiency in irrigation programme
 - Integrated water resource management in basin level planning
 - Water resources information system
 - Participatory irrigation management
 - Increasing crop production and productivity
 - Legal and policy aspects etc.

The inputs of documentation made during such programme will be included in the training course as case studies, adoptable strategies, region specific approaches etc.

j. Faculty improvement programmes

The faculty of NERIWALM should be sharp and well equipped on subjects, different emerging themes and training methodology. A faculty improvement plan will be worked out. In this direction the faculties will be motivated to attend training in national and international organizations.

l. Field Researches:

Field researches are an integral component of a training institute like NERIWALM. This institute deals with farmers, professionals, crops fields, river basins, irrigation projects, flood and floods prone areas, environment management etc. Understanding the real life situation, field scenarios and orienting the training inputs, from such understanding make the trainers most effective in imparting instruction and training. The term field research encompasses understanding the field situation by conducting studies, questionnaire survey, base line studies, experiments, adoptive trials and analysis of primary data collected through studies and experiments and secondary data available in government reports and published literature.

In the context of NERIWALM and MoWR, some studies shall be taken up by the institute in different states. The field research can be funded from institute budget and also could be sponsored by a state department, organization or organization under Ministry of Water Resource. Depending on time availability, other sponsored projects from known funding sources like INCID, DST, ICAR, MoA, NEC, UGC, DIT etc. may be taken up by the institute.

Some of the areas of field researches are:

1. Performance of irrigation in different regions/states
2. Basin wise water situations
3. Crop productions and input utilization
4. Functioning of WUAs
5. Canal automation (upstream/downstream control)
6. Volumetric water measurement

m. Consultancy Services:

The expertise of the institute for undertaking of consultancy services through which revenue can be earned. Such activities will be dependent on sponsor, their requirement in different years. The time to be devoted for such consultancy projects should

not be more than 30% in a financial year. The terms and conditions for consultancy services are to be decided by the Governing Body. The existing Bye-law of NERIWALM provides for undertaking consultancy services and some of financial sharing was also decided by the Management Council in one of its meeting held some times in 1994-95.

n: Student of university and colleges as interns, research scholars, fellows and consultants can be engaged based on the realistic need of different academic activities being implemented at a particular instant of time. For payment of remunerations to such category of personnel suitable provisions are to be made while budgeting the respective academic activity.

o. Facilities for attracting and retaining faculty:

In some Govt. of India training institute, 30% of the basic pay is given as a training allowance for attracting good trainers. The institute envisions to extend similar facility to the faculty to attract and retain faculty to this institute located in a remote place.

p. The laboratories of the institute will be further strengthened by adding instruments /equipments and modernized to get NABL accreditation. Further field equipments will be procured for use in field studies.

q. Publications of institute's various technical activities, Annual Reports, Newsletters, Proceedings of seminars, workshop and conferences etc. will be done and distribute among all user's groups and all concerned.

Action Plan :

An Action plan to achieve the goal and objectives of NERIWALM is presented in the table below

Detailed objective wise 5 year Action Plan 2017-22

| Objective as per MoA | Activity | Programme of Activity | Sub activity | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|------------------------|--------------------------------|--|--|---------|---------|---------|---------|---------|
| Objective 3 (a, b & j) | Training and Capacity Building | Training Need Assessment | Preparation of assessment parameters | ✓ | | ✓ | | |
| | | | Conducting assessment | ✓ | | ✓ | | |
| | | | Mapping TRA with training calendar | ✓ | | ✓ | | |
| | | Training calendar | Preparation of train calendar | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | Sponsored training | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | Training programme | ✓ | | | | |
| | | I-Tech, Skill India & International Programme | I-Tech & Skill India concept note | ✓ | | | | |
| | | | I-Tech & Skill India Proposal | ✓ | | | | |
| | | | International Seminar | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | International Training programme – building network | ✓ | ✓ | | | |
| | | Self Financed Industrial Training for UG Engineering Student | Preparation of module | ✓ | | ✓ | | |
| | | | Communication and finalization of programme | ✓ | | | | |
| | | | One month industrial Training for UG Engineering Student | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Workshop | Planning workshop for Ground water utilization | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | Stakeholder workshop –surface irrigation | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | Regional workshop | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | National workshop-sponsored | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Up gradation of training | Preparation of concept note | ✓ | | | | |
| | | | CSR funding options | ✓ | ✓ | | | |

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|----------------------|--------------------------|---|--|---|---|---|---|---|--|
| | | infrastructure | International trainee hostel | | ✓ | ✓ | | | |
| | | | International Training programme | | ✓ | ✓ | ✓ | ✓ | |
| | | MoU with other institute for training collaboration | NEHARI draft MoU | ✓ | | | | | |
| | | | Others –assessment and possibility & signing IIT-G, IIT-R, etc | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Objective 3(e) & (f) | Research and consultancy | Up gradation of infrastructure | Proposal for a center for land water management and eco restoration at NERIWALM | ✓ | | | | | |
| | | | Concept note for CLWMER for funding under NEC | ✓ | | | | | |
| | | New research project | Pilot project on “Model GW based UG pipe line water distribution system with model PIM and ICT based control” at 5 location in NER, Preliminary work, Planning workshop in respective location | ✓ | | | | | |
| | | | Participatory planning at site | ✓ | ✓ | | | | |
| | | | Pilot project on “Model GW based” for NEC funding | ✓ | | | | | |
| | | | Research project on Water Quality Assessment of NER-2 nd phase | ✓ | ✓ | ✓ | ✓ | | |
| | | | Documentation and main streaming of traditional rain water harvesting system of NER | ✓ | | | | | |
| | | | New project on instrumentation for irrigation water measurement | | ✓ | ✓ | | | |
| | | Testing of Pump and MI equipments | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | | Base line study & SSAP | Baseline study-final report | ✓ | | | | | |
| SSAP | ✓ | | | | | | | | |

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|---------|----------------------------------|---|--|---|---|---|---|---|
| | | Consultancy project | Preparation of Guidelines | ✓ | | | | |
| | | | Environmental Impact Assessment of Irrigation Project & others | | ✓ | ✓ | ✓ | ✓ |
| (c) | Academic programme | Induction level course for line departments leading to PG Diploma | Preparation of module | ✓ | | | | |
| | | | Views of line departments | ✓ | | | | |
| | | | Seeking affiliations | ✓ | | | | |
| | | | Induction level program leading to PG Diploma | | ✓ | ✓ | ✓ | ✓ |
| | | | Post Graduate course | | | ✓ | ✓ | ✓ |
| (h & j) | Outreach & Network with industry | Industry association for MI training- | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | | Set up display and demo | ✓ | | | | | |
| | | Pilot on Model irrigation project –CSR fund – concept note | ✓ | | | | | |
| | | Execution of pilot project | | ✓ | ✓ | ✓ | ✓ | |
| (k) | Printing & publishing | Annual Report 16-17 | ✓ | | | | | |
| | | NERIWALM Achievements 1989 to 2017 | ✓ | | | | | |
| | | Technical bulletin on micro irrigation | ✓ | | | | | |
| | | Compendium of International Seminar | ✓ | | | | | |
| | | Technical bulletin RWH, Automatic Control, DSR | | ✓ | ✓ | ✓ | ✓ | |
| | | News letter | | ✓ | ✓ | ✓ | ✓ | |
| | | Journal | | | | | ✓ | |