

**Application process:**

Prescribed application format is given below:

1. Full Name (in block letters):
2. Designation:
3. Present employer and address:
4. Address to which reply should be sent:  
(Phone, mobile, fax & email id)
5. Date of Birth:
6. Sex: Male/ Female
7. Experience in teaching/research/extension  
(Years)
8. Need for this training and how it helps in  
your on-going research activities

Signature of the applicant

Date:

Place:

Recommendation by Head of College/  
Institute/ Station/ KVK:

Signature:

Designation:

Address:

Duly forwarded applications should be sent to  
the Course Director/Course Coordinator.

Preferred mode of communication is e-mail.

**Important dates:**

Last date for receipt of application:

Jan 25, 2015

Intimation of selection: Jan 28, 2015

Confirmation by participants: Jan 31, 2015

Course Director: Dr. R. K. Avasthe

Course Coordinators: Dr. Raghavendra Singh  
Dr. Subhash Babu  
Mr. Shaon Kumar Das

All correspondence will be addressed to:

Dr. R. K. Avasthe  
Joint Director and Course Director  
ICAR Research Complex for NEH Region  
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OR

Dr. Raghavendra Singh  
Course Coordinator  
Senior Scientist (Agronomy)  
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**TRAINING ON  
AGRO-ECOLOGICAL APPROACHES FOR  
SUSTAINABLE MOUNTAIN FARMING  
UNDER CHANGING CLIMATIC SCENARIO**

**(MARCH 16-25, 2015)**

**Sponsored by**  
**National Initiative on Climate Resilient Agriculture  
(NICRA)**  
**ICAR RC for NEH Region**  
**Umroi Road, Umiam, Meghalaya-793 103**



**Organized by**  
**ICAR Research Complex for NEH Region**  
**Sikkim Centre, Gangtok, Sikkim-737 102**

### **About the training:**

Indian mountain region represents a highly complex, diverse, resource poor and risk - prone system both in terms of biological and physical aspects. The region is a distinct geographic and ecological entity. The hilly ecosystem is vital to the ecological security of the India's mainland through providing forest cover, feeding perennial rivers, conserving biodiversity, providing rich base for high value agriculture, and mighty landscapes for sustainable tourism. Ecologically sensitive mountainous areas are prone to adverse impacts of global climate changes on account of both natural causes and anthropogenic emissions. It is widely acknowledged that climate change is not just about averages, but also of extremes. Increasing temperatures and changing precipitation patterns in the Indian Mountain Region can be expected to influence even more profoundly the regional mountain farming and human populations.

Climatic change effect on the environment and people's livelihoods could impact health, agriculture, forests, water resources, species and natural areas. Temperature and moisture related stresses, along with reduced availability of feed and fodder could lower livestock productivity and pollinator activities. The direct effects of climate change on animal sector will include higher temperatures and changing rainfall patterns, which could translate into the increased spread of existing vector-borne diseases and macro-parasites, accompanied by the emergence and circulation of new diseases. Apart from that rising temperatures may also cause snow to melt earlier this could affect the availability of freshwater for natural systems and human uses. Among them sustainability of the mountain

farming is crucial for improving the livelihood of millions of people inhabited in this region. Agriculture production is the mainstay of food security and subsistence livelihoods in mountain regions.

The proposed training will acquaint the teacher/researcher/extension personnel about adaptation and mitigation strategies for managing emerging environmental problems for enhancing sustainability of agriculture. Apart from that course will also include various resource conservation techniques, technologies for efficient water/ nutrient utilization for enhancing production of crops, soil health, breeding strategies and animal health.

### **The training aims to:**

- ✚ Enhance the capacity and skill of various stakeholders involved in managing ecological approaches for mountain sustainability.
- ✚ Exposure to improved land and water resource management options/ strategies/ models in hill ecosystems.

### **Course Content:**

- ✚ Climate change and mountain agriculture, enhancing resilience with mitigation and adaptation strategies
- ✚ Climate risk management for improved livelihoods of marginal and small farmers of hilly region of India
- ✚ Diversified farming systems: An Agro ecological, systems-based approach for improving livelihoods of mountain region under changing climatic scenario
- ✚ Conservation agriculture: A mitigation and adaptation approach to climate change

- ✚ Potential of aerobic rice in mitigating methane emission
- ✚ Impact of climate change on ground water depletion and crop production and their mitigation strategies
- ✚ Integrated farming systems: options for diversification to manage climate change related risk and livelihood security under hilly ecosystems
- ✚ Analysis of energy use in hill agriculture in the context of climate change: An indicator of environmental sustainability
- ✚ Influence of climate change on emerging, re-emerging and trans-boundary animal diseases in India
- ✚ Adaptation of Indigenous and exotic breeds in relation to change in climate
- ✚ Production strategies of temperate fruits in the era of climate change
- ✚ Agro-ecological approaches for disease management in crops and cropping system under changing climatic conditions
- ✚ Insect pest management through innovative approaches in organic production system for enhancing climate resilience.

**Note: All the contents are practical oriented.**

### **Eligibility:**

Assistant Professors / Scientists / Extension workers, Research Scholars of the different ICAR Institutes, SAUs, CAUs and KVKs etc. will be eligible to apply.

**Note:** All participants are entitled to lodging and boarding and other facilities. **Reimbursement of travelling expenses shall be restricted only up to III AC (excluding Rajdhani and Shatabdi).**