The demonstration project was realised under the Indo-German development project “Climate Change Adaptation in Rural Areas of India” (CCA RAI) which is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Ministry of Environment, Forests and Climate Change (MEFCC), Government of India and state nodal agencies on climate change in four states: Himachal Pradesh, Punjab, Tamil Nadu and Telangana. CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

This demonstration project was realised under the Indo-German development project “Climate Change Adaptation in Rural Areas of India” (CCA RAI) which is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Ministry of Environment, Forests and Climate Change (MEFCC), Government of India and state nodal agencies on climate change in four states: Himachal Pradesh, Punjab, Tamil Nadu and Telangana. CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

**Project Factsheet**

**Designing and Implementing Eco-Village**

**Shimla & Mandi, Himachal Pradesh**

**Department of Environment, Science and Technology (DEST)**

**There was a time when climate change was a serious threat in the future. That future has arrived. Now it is time for adaptation.**

Published by:
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Registered offices
Bonn and Eschborn, Germany
A-2/18, Safdarjung Enclave
New Delhi 110 029 India
T: +91 11 4949 5353 • F: +91 11 4949 5391 • E: info@giz.de
I: www.giz.de

Responsible: Ashish Chaturvedi
ashish.chaturvedi@giz.de

**Project name**
Climate Change Adaptation in Rural Areas of India (CCA RAI)

**Commissioned by**
Federal Ministry of Economic Cooperation and Development (Germany)

**Lead executing agency**
Ministry of Environment, Forests and Climate Change (MEFCC), Government of India

**Partner organisations**
Department of Environment, Science and Technology (DEST), Government of Himachal Pradesh

**Duration**
November 2018 – June 2019

**Budget**
Total project cost is €1,07,622
- GIZ: €53,568
- Co-financing (Himachal Pradesh State Govt): €54,054

**Webpage**
www.giz.de

**State**
Himachal Pradesh

**Location**
Shimla and Mandi District in Himachal Pradesh

**Implementation support**
CTRAN Consulting

**Geographic features**
- Rough hilly terrain

**Climatic stresses**
- Heavy rainfall, heat waves, floods, droughts

**Non-climatic stresses**
- High dependence on money lenders for credit, poor crop production, and absence of drought resistant crop varieties
- Low awareness of government schemes and poor institutional frameworks for water and land management
- No waste management system

**Predominant livelihood sources**
Agriculture and horticulture

**Target groups**
- 120 households of village Baghli in Dhamun Panchayat of Mashobra Block (District Shimla)
- 292 households village Janjheli of Seraj Block (District Mandi)

**THE PROJECT AT A GLANCE**

This demonstration project was realised under the Indo-German development project “Climate Change Adaptation in Rural Areas of India” (CCA RAI) which is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Ministry of Environment, Forests and Climate Change (MEFCC), Government of India and state nodal agencies on climate change in four states: Himachal Pradesh, Punjab, Tamil Nadu and Telangana. CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

BUILD RESILIENCE

Published by:
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Registered offices
Bonn and Eschborn, Germany
A-2/18, Safdarjung Enclave
New Delhi 110 029 India
T: +91 11 4949 5353 • F: +91 11 4949 5391 • E: info@giz.de
I: www.giz.de

Responsible: Ashish Chaturvedi
ashish.chaturvedi@giz.de

**Project name**
Climate Change Adaptation in Rural Areas of India (CCA RAI)

**Commissioned by**
Federal Ministry of Economic Cooperation and Development (Germany)

**Lead executing agency**
Ministry of Environment, Forests and Climate Change (MEFCC), Government of India

**Partner organisations**
Department of Environment, Science and Technology (DEST), Government of Himachal Pradesh

**Duration**
November 2018 – June 2019

**Budget**
Total project cost is €1,07,622
- GIZ: €53,568
- Co-financing (Himachal Pradesh State Govt): €54,054

**Webpage**
www.giz.de

**State**
Himachal Pradesh

**Location**
Shimla and Mandi District in Himachal Pradesh

**Implementation support**
CTRAN Consulting

**Geographic features**
- Rough hilly terrain

**Climatic stresses**
- Heavy rainfall, heat waves, floods, droughts

**Non-climatic stresses**
- High dependence on money lenders for credit, poor crop production, and absence of drought resistant crop varieties
- Low awareness of government schemes and poor institutional frameworks for water and land management
- No waste management system

**Predominant livelihood sources**
Agriculture and horticulture

**Target groups**
- 120 households of village Baghli in Dhamun Panchayat of Mashobra Block (District Shimla)
- 292 households village Janjheli of Seraj Block (District Mandi)

**THE PROJECT AT A GLANCE**

This demonstration project was realised under the Indo-German development project “Climate Change Adaptation in Rural Areas of India” (CCA RAI) which is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Ministry of Environment, Forests and Climate Change (MEFCC), Government of India and state nodal agencies on climate change in four states: Himachal Pradesh, Punjab, Tamil Nadu and Telangana. CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

BUILD RESILIENCE

Published by:
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Registered offices
Bonn and Eschborn, Germany
A-2/18, Safdarjung Enclave
New Delhi 110 029 India
T: +91 11 4949 5353 • F: +91 11 4949 5391 • E: info@giz.de
I: www.giz.de

Responsible: Ashish Chaturvedi
ashish.chaturvedi@giz.de

**Project name**
Climate Change Adaptation in Rural Areas of India (CCA RAI)

**Commissioned by**
Federal Ministry of Economic Cooperation and Development (Germany)

**Lead executing agency**
Ministry of Environment, Forests and Climate Change (MEFCC), Government of India

**Partner organisations**
Department of Environment, Science and Technology (DEST), Government of Himachal Pradesh

**Duration**
November 2018 – June 2019

**Budget**
Total project cost is €1,07,622
- GIZ: €53,568
- Co-financing (Himachal Pradesh State Govt): €54,054

**Webpage**
www.giz.de

**State**
Himachal Pradesh

**Location**
Shimla and Mandi District in Himachal Pradesh

**Implementation support**
CTRAN Consulting

**Geographic features**
- Rough hilly terrain

**Climatic stresses**
- Heavy rainfall, heat waves, floods, droughts

**Non-climatic stresses**
- High dependence on money lenders for credit, poor crop production, and absence of drought resistant crop varieties
- Low awareness of government schemes and poor institutional frameworks for water and land management
- No waste management system

**Predominant livelihood sources**
Agriculture and horticulture

**Target groups**
- 120 households of village Baghli in Dhamun Panchayat of Mashobra Block (District Shimla)
- 292 households village Janjheli of Seraj Block (District Mandi)
CLIMATE TRENDS IN HIMACHAL PRADESH

An analysis of 65 years (1951-2015) of data from the Indian Meteorology Department shows that the annual maximum and minimum temperatures have been increasing in Himachal Pradesh. The increase in temperature and rainfall makes it necessary to adopt more irrigation and water conservation techniques. The climate trends in the state show that the annual maximum and minimum temperatures have been increasing in the state. The trends indicate an increase in the number of rainy days, resulting in the annual rainfall for the state falling on fewer days. This implies more intense rainfall, the possibility of flood damages, and erosion, and landslides. This has increased vulnerability to natural disasters for the state.

WHY ECO-VILLAGE

In Himachal Pradesh, nearly 90% of the population and their livelihood is dependent on agriculture for the region's economy is predominantly agricultural. Himalayan ecosystems are highly vulnerable to multiple stresses caused by forest land-forestation, forest degradation, forest fire, deforestation, soil erosion, deforestation and infrastructure development, mining, and other related challenges. What is also of concern is the depletion of local resources. The state is likely to get exacerbated under mid-century climatic projections. To tackle this challenge, the Department of Environment, Science and Technology, Govt. of Himachal Pradesh, has created a scheme to implement the concept of an environmentally sustainable Eco-Village. The project aims to create a self-sustainable village through the adoption of low environmental impact practices, this can result in water security, food security and livelihood security for the resident community.

ADAPTING HYPOTHESIS

Ensuring sustainable development in village systems and integrated and inter-related natural systems depends upon success of the local community. Further strengthening of adaptive capacity to face impacts, this can result in water security, food security and livelihood security for the resident community.

ADAPTATION HYPOTHESES

Existing sustainable development in villages has contributed to inter-related natural systems and a successful plan. Further strengthening of adaptive capacity to face future water and food insecurity as well as other related issues need to be strengthened. Further strengthening of adaptive capacity to face future water and food insecurity as well as other related issues need to be strengthened.

ADAPTATION INTERVENTIONS

- Water source conservation and protection
  - Promote source conservation practices in spring sheds, adult spring shed plan, rejuvenation through the landscape approach.
  - Protection of Organic Farming, Farm product management process, Crop.

- Water management
  - Rainwater harvesting, Water Waste management, Water conservation practices for all seasonal water use management and sustainable water use.

- Waste Management
  - Source Segregation, Composting, Reuse and Recycling of goods and materials and utilization of biodegradable waste.

- Forest Management and Eco Services
  - Preparation of a water security plan in identified spring-sheds, climate resilient spring shed plans, rejuvenation through the landscape approach.

- Capacity Building Interventions
  - Awareness
  - Sensitization of stakeholders to altered rainfall patterns, increased temperature, and other climate change impacts.
  - Awareness and training on climate change adaptation and mitigation techniques and will help in irrigating the agricultural fields properly.

- Success Factors
  - Focus given to convergence of different schemes and resources to adopt proposed plans.
  - Regular coordination between stakeholder inputs at state level and local level.

- BENEFITS AND ADDITIONAL VALUE FOR ADAPTATION

- Water source conservation and protection
  - Improved integrity of source spring shed plan, rejuvenation through the landscape approach.

- Water waste management
  - Sanitation of local communities. Achieved through waste water treatment plant and installation of solar street lights.

- Water management
  - Generation of value from otherwise untreated waste, and improved health and sanitation.

- Waste Management
  - Generation of alternative source of livelihood for the local community through recycling of waste, reuse of organic farm waste and other climate smart solutions.

- Forest Management and Eco Services
  - Generation of renewable source of generation of power leading to decreased dependence on rain-fed agriculture, through training on Micro irrigation and building of farm ponds and farm fed irrigation tanks.

- Water Management
  - Decreased dependence on rain-fed agriculture, through training on Micro irrigation and building of farm ponds and farm fed irrigation tanks.

- Capacity Building Interventions
  - Improved knowledge, skill and ability of locals. Improved productive capacity of village community and social and modern technology and other additional values.
  - Improved efficiency in conventional environmentally detrimental and unsustainable role.

- Conclusion
  - Increased awareness of micro-irrigation benefits, soil health management and other water Conservation.
CLIMATE TRENDS IN HIMACHAL PRADESH

An analysis of 65 years (1951-2015) of data from the Indian Meteorology Department shows that the annual maximum and minimum temperatures have been increasing in Himachal Pradesh. The increase in temperature will need to incorporate and require more irrigation for crops. The analysis also predicts a definite decrease in annual rainfall for the state. More importantly, there is a strong trend towards a decrease in the number of rainy days, resulting in the annual rainfall for the state falling on fewer days. This implies more intense rainfall, increasing the possibility of flash floods, erosion, and landslides. This forecast increased vulnerability to natural disasters for the state.

WHY ECO-VILLAGE

In Himachal Pradesh, nearly 90% of the population and their livelihood is dependent on natural resources for agriculture since the region is predominantly mountainous. Himalayan ecosystems are highly vulnerable due to multiple reasons; stress caused by forest land-uses, forest degradation, deforestation, logging, wood collection, forest fires, infrastructure development, and other related challenges. Village-level environmental and social science is a concept that has been studied by the Department of Environment, Science and Technology, Govt. of Himachal Pradesh, to create a sustainable, low-carbon eco-village in the region. The project aims to create a self-sustainable village through the adoption of low-carbon techniques and will help in irrigation the agricultural fields properly. The water scarcity in summers will be resolved by the proper water usage.

REPLICATION UNDER INDIAN CONDITION

To replicate the basic approach of formulating an eco-village development plan, a bottom-up approach must be adopted. For an eco-village concept at a new location, consultations to identify issues/problems. This can help in preparing a step-by-step detailed plan. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems. A baseline data collection and analysis should be undertaken to identify issues/problems.

SUCCESS FACTORS

- Local level vulnerability assessment help to identify existing climate and environment related issues, and prepare residents, farmers, communities and government to easily adapt to proposed plans/

- Regular meetings for exchange of information.
- Focus given to convergence of different schemes and resources to adopt proposed plans/

- Regular coordination between block level as well as state level departments, especially state level steering committees formed to guide this scheme.

- Knowledge management and highlighting of success stories at state and national level.
- Increased Awareness of villagers on climate change adaptations leading to judicious use of water, through proofing measures, wind and solar generation technologies and other climate smart solutions.

SUCCESS FACTORS

- Local level vulnerability assessment help to identify existing climate and environment related issues, and prepare residents, farmers, communities and government to easily adapt to proposed plans/

- Regular meetings for exchange of information.
- Focus given to convergence of different schemes and resources to adopt proposed plans/

- Regular coordination between block level as well as state level departments, especially state level steering committees formed to guide this scheme.

- Knowledge management and highlighting of success stories at state and national level.
- Increased Awareness of villagers on climate change adaptations leading to judicious use of water, through proofing measures, wind and solar generation technologies and other climate smart solutions.

SUCCESS FACTORS

- Local level vulnerability assessment help to identify existing climate and environment related issues, and prepare residents, farmers, communities and government to easily adapt to proposed plans/

- Regular meetings for exchange of information.
- Focus given to convergence of different schemes and resources to adopt proposed plans/

- Regular coordination between block level as well as state level departments, especially state level steering committees formed to guide this scheme.

- Knowledge management and highlighting of success stories at state and national level.
- Increased Awareness of villagers on climate change adaptations leading to judicious use of water, through proofing measures, wind and solar generation technologies and other climate smart solutions.

SUCCESS FACTORS

- Local level vulnerability assessment help to identify existing climate and environment related issues, and prepare residents, farmers, communities and government to easily adapt to proposed plans/

- Regular meetings for exchange of information.
- Focus given to convergence of different schemes and resources to adopt proposed plans/

- Regular coordination between block level as well as state level departments, especially state level steering committees formed to guide this scheme.

- Knowledge management and highlighting of success stories at state and national level.
- Increased Awareness of villagers on climate change adaptations leading to judicious use of water, through proofing measures, wind and solar generation technologies and other climate smart solutions.

SUCCESS FACTORS

- Local level vulnerability assessment help to identify existing climate and environment related issues, and prepare residents, farmers, communities and government to easily adapt to proposed plans/

- Regular meetings for exchange of information.
- Focus given to convergence of different schemes and resources to adopt proposed plans/

- Regular coordination between block level as well as state level departments, especially state level steering committees formed to guide this scheme.

- Knowledge management and highlighting of success stories at state and national level.
- Increased Awareness of villagers on climate change adaptations leading to judicious use of water, through proofing measures, wind and solar generation technologies and other climate smart solutions.
**THE PROJECT AT A GLANCE**

This demonstration project was realised under the Indo-German development project ‘Climate Change Adaptation in Rural Areas of India’ (CCA RAI) which is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and state nodal agencies on climate change in four states: Himachal Pradesh, Punjab, Tamil Nadu and Telangana. CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development (BMZ).

### Project name
Climate Change Adaptation in Rural Areas of India (CCA RAI)

### Commissioned by
Federal Ministry of Economic Cooperation and Development (Germany)

### Lead executing agency
Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India

### Partner organisation
Department of Environment, Science and Technology (DEST), Government of Himachal Pradesh

### Duration
November 2018 – June 2019

### Budget
- Total project cost is €1,07,622
  - GIZ: €53,568
  - Co-financing (Himachal Pradesh State Govt): €54,054

### Website
[www.giz.de](http://www.giz.de)

### State
Himachal Pradesh

### Location
Shimla and Mandi District in Himachal Pradesh

### Duration
December 2018 – October 2019

### Implementation support
CTRAN Consulting

### Geographic features
Rough hilly terrain

### Climatic stresses
Heavy rainfall, heat waves, floods, droughts

### Non-climatic stresses
- High dependence on money lenders for credit, poor crop production, and absence of drought resistant crop varieties
- Low awareness of government schemes and poor institutional frameworks for water and land management
- No waste management system

### Predominant livelihood sources
Agriculture and horticulture

### Target group(s)
- 120 households of village Baghalli in Dhamun Panchayat of Mashobra Block (District Shimla)
- 292 households of village Janjheli of Seraj Block (District Mandi)

---

**PROJECT FACTSHEET**

**DESIGNING AND IMPLEMENTING ECO-VILLAGE**

**SHIMLA & MANDI, HIMACHAL PRADESH**

**DEPARTMENT OF ENVIRONMENT, SCIENCE AND TECHNOLOGY (DEST)**

*Published by: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*