Natural Capital Project workshop on ecosystem service benefits of targeted watershed investments

Hotel Holiday Home, Shimla, Himachal Pradesh
21 May, 2014

Objective

- Familiarize HP secretaries, department heads, and field staff with a natural capital approach to valuing ecosystem services for hydropower (and potentially other sectors) in HP.
- Familiarize HP staff with methods and tools for incorporating natural capital and ecosystem services into decisions about land management and investments in watershed improvement.
- Demonstrate the usefulness of a science-based natural capital approach and discuss the capacity needed to apply and improve the tools and methods used in this pilot study in HP.

Agenda:

10:00 – 10:15am	**Welcome** *Dr. S.S. Negi, Director, Environment, Science and Technology (5 min)* *Tarun Shridhar – Principal Secretary, Forest (10 min)*
10:15 – 10:20am	**Participant introductions**
10:20 – 10:30am	**Overview of forest accounts and payments for ecosystem services** *Urvashi Narain, Senior Environmental Economist, World Bank*
10:30 – 10:40am	**Linking forest management and planning to ecosystem services and forest accounting in H.P.** *Anil Vaidya, Conservator of Forests, HP Forest Department*
10:40 – 11:15am	**Prioritizing investments in watershed services using the RIOS and InVEST models** *Adrian Vogl, Senior Scientist, Natural Capital Project*
11:15 – 11:30	**BREAK**
11:30 – 12:00pm	**Overview of results for five HP hydroelectric power facilities** *Stacie Wolny, GIS Analyst, Natural Capital Project*
12:00 – 12:15pm	**Questions and discussion**
12:15 – 12:45pm	**Future work, capacity and data needs** *Adrian Vogl, Senior Scientist, Natural Capital Project*

12:45pm – 1:00pm	**Technical capacity needed to apply and improve the approach in HP** *Discussion facilitated by Urvashi Narain*
1:00 – 2:00pm	**LUNCH BREAK**
2:00 – 3:00pm	**Introduction to models used in the HEP study: RIOS and InVEST** *Adrian Vogl, Stacie Wolny*
3:00 – 3:30pm	**Local information used in the HEP study** *Stacie Wolny*
3:30 – 3:45pm	**Questions and Discussion**
3:45 – 4:00pm	**BREAK**
4:00 – 5:00pm	**Data needs to apply and improve the approach in HP** *Discussion facilitated by Adrian Vogl*
5:00	**ADJOURN**

Natural Capital Project training workshop on InVEST and RIOS models for watershed investment prioritization
AGiSAC, Shimla, Himachal Pradesh
22 – 23 May, 2014

Objectives
Provide technical overview of the Natural Capital Project's RIOS and InVEST models for prioritizing, mapping, and valuing ecosystem services for water yield and sediment retention. Build capacity among HP technical staff and field functionaries of Forest Department from Satluj, Ravi, Beas and other catchments that will be using the models. Build understanding of the technical capacity and data requirements needed to apply the models in HP, and discuss gaps in capacity and data that must be addressed for future applications to succeed.

Format
The training will include presentation on models and data requirements followed by hands-on training with software tools. The training will be held at AGiSAC with the necessary models and study data pre-installed on several machines to allow participants to work through hands-on exercises in small groups with support from Natural Capital Project staff.

Agenda:

22 May 2014

10:00 – 10:30am	**Welcome and introductions** *Urvashi Narain, World Bank*
10:30 – 11:15am	**Prioritizing investments in watershed services with RIOS** *Adrian Vogl*
11:15 – 11:45am	**Data preparation and pre-processing for the RIOS model** *Stacie Wolny*
11:45 – 12:00pm	**BREAK**
12:00 – 1:30pm	**Hands on with RIOS** Participants break into small groups to practice running the RIOS model with data from HP. Activities are designed to familiarize participants with how the model functions, analyzing alternatives and interpreting outputs.
1:30 – 2:00pm	**LUNCH BREAK**
2:00 – 2:30pm	**Mapping and evaluating ecosystem services with InVEST I – water yield** *Stacie Wolny*

2:30 – 3:00pm **Data preparation and pre-processing for the water yield model**
Stacie Wolny

3:00 – 3:15pm **BREAK**

3:15 – 3:30pm **Getting started with InVEST water yield model**
Adrian Vogl

3:30 – 5:00pm **Hands on with InVEST I – water yield**
Participants break into small groups to practice running the water yield model with data from HP. Activities are designed to familiarize participants with how the model functions, analyzing alternative scenarios generated by RIOS and/or other methods, and interpreting outputs in the context of HP.

5:00 – 5:30pm **Report back from groups: Results from hands-on exercises, Q&A**

5:30pm **ADJOURN**

23 May 2014

10:00 – 10:30am **Deep dive on modeling approach – linking RIOS and InVEST models**
Adrian Vogl

10:30 – 11:00am **Mapping and evaluating ecosystem services with InVEST II – sediment retention**
Stacie Wolny

11:00 – 11:15am **Data preparation and pre-processing for the sediment retention model**
Stacie Wolny

11:15 – 11:30am **BREAK**

11:30 – 1:00pm **Hands on with InVEST II – sediment retention**
Participants break into small groups to practice running the sediment retention model with data from HP. Activities are designed to familiarize participants with how the model functions, analyzing alternative scenarios generated by RIOS and/or other methods, and interpreting outputs in the context of HP.

1:00 – 1:30pm **Report back from groups: Results from hands-on exercises, Q&A**

1:30 – 2:00 **LUNCH BREAK**

2:00 – 2:30pm **Interpreting study results in HP – model integration, CAT plans and future work**
Adrian Vogl, Stacie Wolny

The remainder of the afternoon session will comprise a facilitated discussion on several topics relevant to the application of this approach and the RIOS/InVEST models in HP.

2:30 – 3:00pm **Application: Using RIOS and InVEST to inform payments for watershed services in HP**

3:00 – 3:45pm **Feedback from HP technical staff on results from the modeling study, how can the approach and/or data be improved?**

3:45 – 4:00pm **BREAK**

4:00 – 5:00pm **Discuss opportunities for applying the models in HP, as well as technical capacity needs, data gaps, and other challenges that should be considered.**

5:00pm **ADJOURN**