

SUMMARY OF CASE ON COMMUNITY FORESTRY

Laura Vang Rasmussen, Reem Hajjar & Sarah Wilson

Forests and Livelihoods: Assessment, Research and Engagement (FLARE) Network, School of Natural Resources & Environment, University of Michigan, MI 48109, USA

Community-based forestry is increasingly promoted as a way to both conserve forests and enhance rural livelihoods. At its best, it does this very well, as illustrated by the numerous examples of successful projects from around the world. But often, these projects also fail to meet their objectives. For decision-makers and practitioners working in local, national and international arenas, it can be challenging to determine how best to support community-based forestry in a given context. This case uses a global dataset on community forestry, and an in-depth case study in Nepal, to illustrate the multitude of factors that need to be considered in promoting community forestry.

This case addresses the following overarching questions:

- What factors (institutional, demographic, economic, and biophysical) are associated with positive social and ecological outcomes in community-based forestry?
- How can existing data be used to inform decision-making on community forestry, and how can decisions be made when context-specific data is limited?

Learning objectives include mastering content (including the diverse range of ecological and social outcomes of community-based forestry), and skills (including analysing and synthesizing large datasets, stakeholder analysis, developing testable hypotheses, working on interdisciplinary teams, and communicating the evidence base to stakeholders and policy makers) relevant to addressing complex problems in socio-ecological systems across various contexts.

1. INTRODUCTION

Tropical deforestation rates remain the highest in the world, with severe consequences for global biodiversity, climate change, and rural livelihoods. To counter this trend, many development agencies with poverty alleviation agendas and/or forest conservation goals are promoting the devolution of forest management and use rights to local peoples and communities in community-based forestry agreements.

Community-based forest management is an excellent example of a socio-ecological system, in which feedbacks between people's objectives are reflected in forest management activities and ultimately in the structure and function of the forest. The condition of the forest then, in turn, affects the degree to which people rely on it, and the management activities they pursue.

Here's a hypothetical example of how community-based forestry might work. Consider a government-owned forest to which people have recently been granted legal access to harvest valuable timber species. Prior to receiving access,

people have been 'illegally' harvesting firewood and timber when they can to supplement farming incomes. The forest condition has deteriorated as a result of expanding agriculture at the periphery, and ad-hoc harvesting in the interior. Native biodiversity is being lost, and as forests are cleared, carbon released. Although people use the forests to supplement their livelihoods, due to the risky nature of illegal harvests they are unable to rely on it as a steady income source and must continue to grow cash crops at the periphery. Unable to support themselves with the available employment options, people leave the community to work abroad in cities, or to obtain an education.

But now that forests can be harvested, people are able to develop a sustainable management plan over several years, and a governing body to enforce harvesting limits. Benefits, work, and risks are shared between all members of the community, who are able to count on a more or less stable source of income from the forests. Illegal activities decline, a buffer zone is enforced around the forest boundary to protect its integrity (and harvest capacity). As forestry activities become more robust and prove themselves profitable, more investment is made in forestry and less in cash agriculture, and forest condition and area continue to improve and expand. People are able to remain in the region rather than moving to the city for work, and the rural culture remains more intact. The community is able to support social programs (schools, health facilities) with the shared income. Cultural, social, economic and environmental sustainability flourish.

An example of such an initiative can be found here:

<https://www.youtube.com/watch?v=sIiMo8zkMqA>

Thus, at its best, these community forestry initiatives can be a win-win solution for people and forests, conserving forests and maintaining carbon sinks while providing a source of income for rural peoples. But projects do not always live up to this potential – often environmental and social objectives are not met, projects are abandoned, or benefits are captured by only a few 'elite' members of the community. In this module, our objectives are to learn about community forestry objectives and potential outcomes, and use data to analyze why, where and when projects meet their objectives, and when they fail to do so.

Nepal has one of the oldest and most extensive community-based forestry programs operating today. This module will use the case of Nepal to illustrate the main points and provide a basis for analysis.

2. LEARNING GOALS

- Understand the principles, objectives and scope of community forestry initiatives.
- Use existing data to analyze community forestry dynamics and their livelihood and forest outcomes.
- Integrate different methods and perspectives in natural resource management decisions.

- Use and evaluate different evidence bases commonly used to make policy recommendations for a particular context.

3. LEARNING OBJECTIVES

At the end of this case, students will be able to:

1. Describe community-based forestry and its ecological and social goals. (Readings).
2. List relevant stakeholders in community based forestry, and map out their perspectives and interests, and how these are related (Group discussion).
3. Identify key variables that influence the performance of community-based forestry arrangements through an iterative process of reviewing the literature, discussing with peers, and statistical analyses. (Group discussion).
4. Design testable research hypotheses and research strategies to answer them integrating qualitative and quantitative data. (Group assignment with peer evaluation).
5. Use qualitative data to address hypotheses (Group assignment with peer evaluation).
6. Perform analyses to examine relationships between forests and people using the IFRI data set (Group assignment with peer evaluation).
7. Discuss the utility of a national data set in a local context, its advantages and limitations, and what additional information/data may be needed to inform localized decisions (Group discussion).
8. Create recommendations for effective community-based forest management that are applicable and adaptable to different contexts.

ASSIGNMENTS AND MATERIALS INCLUDED:

1. Powerpoint for each lecture/class.
2. In teacher's guide, include links to or descriptions of: minute papers, muddiest points, group discussion, think-pair-share.
3. Page description on community based forestry (above).
4. Links to videos on:
 - a. Introduction to multiple regression
 - b. Nepal videos for case study context
5. Link to the IFRI dataset and description: <http://www.forestlivelihoods.org/resources/> and click IFRI dataset
6. Rubrics for grading assignments (in powerpoint).

4. TEACHING UNITS (2 hours each):

4.1 Class 1

Pre-class readings:

Introduction to community forestry (Tropenbos):
<https://www.youtube.com/watch?v=6lBOPkCl3a4>

Pagdee A, Kim Y, Daugherty PJ. 2006. What makes community forest management successful: a meta-study from community forests throughout the world. *Society & Natural Resources* 19(1):33–52

Bowler DE, et al. 2012. Does community forest management provide global environmental benefits and improve local welfare? *Frontiers in Ecology and the Environment* 10(1):29–36.

Hajjar R, McGrath DG, Kozak RA, Innes JL. 2011. Framing Community Forestry Challenges with a Broader Lens: Case Studies from the Brazilian Amazon. *Journal of Environmental Management* 92 (9): 2159–69.

Baynes, J., Herbohn J, Smith C, Fisher R, Bray D. 2015. Key Factors Which Influence the Success of Community Forestry in Developing Countries. *Global Environmental Change* 35. Elsevier Ltd: 226–38.

Learning objectives addressed:

1. Describe community-based forestry and its defining characteristics.
2. List relevant stakeholders in community based forestry, map out their perspectives and interests, and how these are related.
3. Identify key challenges that influence the creation and performance of community-based forestry arrangements through an iterative process of reviewing the literature and discussing with peers.

Learning Objectives	Activities	Outcomes and Assessment
Describe community-based forestry and its defining characteristics	A. Readings B. Lecture introducing these concepts	<i>Per group:</i> <ul style="list-style-type: none"> • Analysis of relation between forests and people in a specific context <i>As a class:</i> <ul style="list-style-type: none"> • List of advantages and potential pitfalls of the IFRI dataset • Description of difference between association/relation and causation in statistical interpretation of the relation between forests and people
List relevant stakeholders, map out perspectives and interests, and how these are related	A. Class listing of stakeholders B. Discussions in	<i>As a class:</i> <ul style="list-style-type: none"> • List of stakeholders <i>Per stakeholder group</i> <ul style="list-style-type: none"> • List of interests, before and after speaking to other stakeholders

	stakeholder groups C. Jigsaw for discussion across stakeholder groups	
Identify key challenges influencing community-based forestry	D. Concept mapping as a class	<i>As a class</i> <ul style="list-style-type: none"> • Concept map of challenges • List of stakeholders to help overcome each challenge

Activities:

1. Wordle (pre-class)
 - a. In the class prior to the community forestry class, ask students to write down three keywords or terms that they associate with “community forestry”. Collect these. Prepare a wordle to present at the beginning of the CF class to show to the students. This will allow you to assess their previous knowledge/understanding of community forestry, while also showing the class what their peers considered defining characteristics of CF. Follow this with the short lecture below.

2. Short lecture on defining community forestry
 - a. Use included powerpoint (about 30-45 minutes) to go through some of the defining characteristics of community forestry and the reasons why it has been promoted

3. Mapping stakeholders and interests; [role-playing]

Present a hypothetical situation (see student handouts) where there is a large patch of forest adjacent to a community that uses the forest informally for subsistence purposes and some informal commercialization. The forest is deemed as productive (has the potential to produce timber/non-timber products). The forest currently is technically owned by the government, and the government is trying to make a decision about how best to manage this forest. Several stakeholders are lobbying the government with their ideas of what to do with the forest.

- a. Who are the stakeholders? (class discussion and listing),
 As a class, discuss who the main stakeholders are who have an interest in what happens to this patch of forest. Teacher lists these on the board. [possible answers: community members; government agencies; private sector companies – timber or agriculture oriented; local/international NGOs – environmental or development oriented or technical].

- b. What are their interests in forestry? What do they want to get out of the forests (group discussions, once split into stakeholder groups). Divide the class into groups of 3-4 (depending on class size and the number of identified stakeholder groups). Assign each group a different stakeholder, and ask them to discuss as a group what the

interests of that group are. Have them write these down in bullet point format. Get the groups to highlight which of their bullet points are non-negotiable (must haves) – but make sure that they are identifying not just their “demands” but the reasons behind the demand. For example, a government stakeholder might want to retain control of the forest for various reasons – to make sure it is managed sustainably, to make sure they are getting revenue from it, etc. These are the interests behind the demands. Make sure that each group member is familiar with their group’s core interests.

*additional note for the community member stakeholders: encourage them to think of a diversity of interests, noting that communities are not homogenous.

c. Jigsaw activity

Re-arrange the groups (jigsaw) so that there are representatives of different stakeholders in each group. Try to ensure at least one community member stakeholder is in each group. Each jigsawed group member presents their interests to others; students in jigsawed group to take note of potential conflicting interests with others, come up with some compromises, together. If this hasn’t come up yet in the group discussions, ask: Would community forestry bridge any of these interests? How so? [option to discuss these last questions as a whole class after the jigsaw activity]

4. Concept mapping of potential challenges/important factors affecting CFM [class discussion].

Now that everyone has had a chance to discuss stakeholders’ interests from different viewpoints, have a class discussion on how to promote community forestry. If all parties were trying to put forward a community forest from this forest patch, what sort of steps would need to be taken? What sort of challenges might be presented? What are the roles of different stakeholders in overcoming these challenges? [see Hajjar et al. reading for an example of potential concept map, but let the students come up with their own ideas]

5. Wrap up class discussion: Given various stakeholder views, and challenges, how should we define success in community forestry? Highlight the importance of different viewpoints on this, and what success means in any particular context.

Assessment:

- Paragraphs on stakeholder interests. When in groups, get the groups to write out a more formal paragraph or two outlining their interests. Then get them to re-write these interests after having participated in the jigsaw activity to hear others’ perspectives

4.2: Class 2

Homework in preparation for Class 2:

Statistics tutorials:

Depending on familiarity with multiple regression, watch the following statistical tutorials series, starting with:

Stats 101: Multiple regression, the very basics:

<https://www.youtube.com/watch?v=dQNpSa-bq4M>

You can watch data preparation in this series if need be, and be sure to watch:

Stats 101: Evaluating multiple regression models:

https://www.youtube.com/watch?v=wPJ1_Z8b0wk

Nepal context: Watch:

Community Forestry in Nepal: are the Poor Benefiting?

<https://www.youtube.com/watch?v=JRGMwffFByU>

Nepal's Community Forests: IGES Forest Governance e-Learning Series 1

<https://www.youtube.com/watch?v=fwvOgIwzO2A>

Pre-class readings:

- Acharya, K. P. (2002). *Twenty-four years of community forestry in Nepal. International Forestry Review*, 4(2), 149-156.
- Malla, Y. B. (2000). *Impact of community forestry policy on rural livelihoods and food security in Nepal. Unasylva*, 51(202), 37-45.
- Thoms CA. 2008. *Community control of resources and the challenge of improving local livelihoods: A critical examination of community forestry in Nepal. Geoforum* 39:1452-1465
- Birch et al. 2014. *What benefits do community forests provide, and to whom? A rapid assessment of ecosystem services from a Himalayan forest, Nepal. Ecosystem Services* 8: 118-127

Learning Objectives	Activities	Outcomes and Assessment
Identify key variables that influence the performance of community-based forestry arrangements through an iterative process of reading the literature, discussing with peers, and statistical analyses	A. Readings B. Lecture introducing these concepts C. Small group discussion/brainstorm	<i>Per group:</i> <ul style="list-style-type: none"> • Defining success • Identifying key variables that predict success along these variables.
Design testable research hypotheses and research strategies to answer them integrating qualitative and quantitative data	E. Small group creates hypotheses F. Peer feedback on alignment between questions and hypotheses, also how testable these hypotheses are. G.	<i>Small group</i> <ul style="list-style-type: none"> • Set of testable hypotheses aligned with research questions, and an analytical strategy to test them.

Perform analyses to examine relationships between forests and people using the IFRI data set	H. Small group work based on readings, class lecture.	<i>Small group</i> <ul style="list-style-type: none"> • Completed analytical results • Visualizations of results
----------------------------------------------------------------------------------------------	-------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------

4.2 Class 2

Learning objectives addressed:

1. Identify key variables that influence the performance of community-based forestry arrangements through an iterative process of reading the literature, discussing with peers, and statistical analyses.
2. Design testable research hypotheses and research strategies to answer them integrating qualitative and quantitative data.
3. Understand what a regression is - why do we use it, when, and what does it tell us.

Teacher's Note: Goals 4 and 5, below, involve using statistical programs and are intended for a class in which statistics is a prerequisite. Depending on the level of the class, as an alternative to goals 4 and 5, students could instead identify variables that they would put into a model – i.e., those that are theoretically important based on the literature – without running the analysis. They could then discuss what they would have expected to find, and why...).

4. Apply regression to address community forestry questions.
Perform multivariate analyses to examine relationships between forests and people using the IFRI data set.

Activities:

1. Draft outline of research questions related to factors leading to successful outcomes of community forestry (small group).
 - In groups of 4-5, students will discuss the readings, and brainstorm a list of the factors that are critical to consider when looking at the success of community based forestry. Students should also outline what the literature calls “success”, and state their own definition considering both environmental and social factors.
2. Create hypotheses based on these questions (small group).
 - Students will select 3 to 6 factors that are critical to understanding when community based forestry will be successful, based on their own definition of success. They will then develop testable hypotheses around these variables that would allow them to determine if a given community is likely to be well suited to community-based forestry, given that data is available on these factors.
3. Peer review of alignment between hypotheses and questions (small group exchange);
 - Groups will pair with another group, and provide a short presentation of their research questions and hypotheses. Each group will have ten minutes to present, followed by twenty

minutes of discussion. Discussion should answer the following questions:

- Are the questions “research questions”?
 - Do the hypotheses allow the students to address these questions? If not, how can questions and hypotheses be realigned?
 - Are the hypotheses testable? If not, how can they be rephrased?
4. Identify needed ecological and social data (qualitative and quantitative) required to test these hypotheses (small groups);
 5. Find relevant variables in IFRI dataset/other sources (<http://www.forestlivelihoods.org/resources/> and click IFRI dataset
The IFRI dataset has information on both social and ecological factors, available online. Students will identify the variables needed to address their hypotheses. Students are also welcome to research and draw from other data should they have other sources available to them, qualitative or quantitative, but this is not required.
 6. Identify types of analyses to be carried out based on the IFRI dataset (small groups).
 - Based on the research questions, hypotheses, and the data available, students will determine the most appropriate analyses for answering their research questions. This analysis might be qualitative or quantitative; use regression, coding, literature review, etc.,
 7. Data wishlist: Minute paper on what data they wish they’d had – What they would collect in the field (individual, 10 minutes writing, 10 minutes discussion)?
 - Students will imagine that they are going to the field. They should reflect on their data and analyses to identify gaps in their ability to address their questions/hypotheses, and identify 1-3 additional data types or variables that would allow them to better address their questions, and that they would collect if they could. Students will then present their ideas for feedback from the small group.

Homework:

In their small groups, students will run the analyses they proposed, and find a way to visualize the results using graphs, charts, tables, figures, etc. This will be presented to the class as part of their presentation. An alternative for classes with less prior statistical experience is to instead identify variables that they would put into a model – i.e., those that are theoretically important based on the literature – without running the analysis. In class, they justify their decision, and discuss what they would have expected to find, and why.

4.3 Class 3

The overall learning goals of Class 3 are to understand how existing data can be used to inform decision-making on community forestry, and how decisions might be made when context-specific data is limited. The class period is 2 hours. The specific objectives for the class are as follows:

- Discuss the utility of a national data set in a local context, its advantages and limitations, and what additional information/data may be needed to inform localized decisions.
- Create recommendations for effective community-based forest management that are applicable and adaptable to different contexts.

Learning Objectives	Activities	Outcomes and Assessment
Discuss the utility of a national data set in a local context, its advantages and limitations, and what additional information/data may be needed to inform localized decisions	<p>D. PRESENTATION: Groups present the results of the analyses (of the IFRI data) completed as part of Class 2</p> <p>E. PLENARY: Teacher feedback on the ways in which students have used the IFRI data to understand the performance of community-based forestry arrangements</p>	<p><i>Per group:</i></p> <ul style="list-style-type: none"> • Analysis of relation between forests and people in a specific context <p><i>As a class:</i></p> <ul style="list-style-type: none"> • List of advantages and potential pitfalls of the IFRI dataset • Description of difference between association/relation and causation in statistical interpretation of the relation between forests and people
Create recommendations for effective community-based forest management that are applicable and adaptable to different contexts	<p>I. PLENARY: How to write a policy brief</p> <p>J. BREAK INTO GROUPS: Brainstorm on what key argument about forests and people to be the focus of the policy brief</p>	<p><i>As a class:</i></p> <ul style="list-style-type: none"> • List of do's and don'ts when writing a policy brief <p><i>Per group:</i></p> <ul style="list-style-type: none"> • Outline of policy brief on community forestry

Preparation:

Prior to the class students will have completed the analysis of relations between forests and people in selected areas. Each group (3-4 people) will prepare a five-minutes presentation of their main results.

Also, to get a sense of how to write a policy brief, students will read Adams (2014) and Phalan et al. (2016). They will annotate these policy briefs based on their ability to communicate policy recommendations.

Pre-class readings:

- Adams W.M. 2014. The value of valuing nature. *Science* 346(6209): 549-551
- Agrawal A., Chhatre A., Hardin R. 2008. Changing Governance of the World's Forests. *Science* 320: 1460-1462

Activities:

1. PRESENTATION: Each group has five minutes to present the outcomes of their analysis of the relation between forests and people in specific areas. After each presentation, there will be about five minutes for potential questions from fellow students. Students should be encouraged to ask questions directly related to potential pitfalls and advantages of using the IFRI database. The exercise should not take more than 50 minutes in total (the time allocated for each presentation may be adjusted according to the number of groups).
2. PLENARY: The teacher provides feedback on the ways in which each group has used the IFRI data to understand the performance of community-based forestry arrangements. Specifically, the teacher should draw out limitations of the analyses conducted and provide examples of additional analyses that could have been carried out. Moreover, the teacher will outline the difference between association/relation and causation in statistical interpretation of the relation between forests and people. The plenary will lead to a list of advantages and potential pitfalls of using the IFRI dataset to address community forestry arrangements. The plenary should last about 10-15 minutes.

The second hour of the class will be focused on the creation of recommendations for effective community-based forest management:

1. PLENARY: The teacher will give a short lecture on 1) the aim of a policy brief, 2) some standard requirements regarding the construction of a policy brief, and 3) examples of influential policy briefs within the field of community forestry. During the lecture, the teacher will list out do's and don'ts when writing up a policy brief. The lecture (ppt called Class 3) will last about 20 minutes.
2. BREAK INTO GROUPS: Students will break out into groups with the purpose of formulating the key argument to be promoted in the policy briefs. The break out session will begin with each student having 3 minutes to think about how to pitch an argument about community forestry. The students will then take turns to present their arguments and the group will collectively brainstorm on whether the data analyses conducted allow them to make that argument. Finally, the students will agree upon one main argument that will be the focus of their policy brief. The break out session will last about 35 minutes.

After the break out session, the teacher will end the class by explaining the homework assignment (write up the policy brief). This should take no more than 5 minutes.

Homework after Class 3:

- Finalize policy brief which will be graded by the teacher.

The policy brief should be 1000 to 2000 words, include 1-2 figures, and it can have up to 15 references. It must take point of departure in the analyses carried out in class 2 and present these issues in a way that is relevant and of interest to a particular audience such as community leaders, national or local-level policy-makers, agriculture business stakeholders, conservationists, or NGO development agents.

Possible supplemental activity for additional classes or more intensive group assignments:

- Have students select their own country of focus from the IFRI data set
- Run similar analyses for that country
- Students do additional research to come up with a “fact sheet” about community forestry in that country [provide some starter resources for this, but students should be able to do this on their own by googling]. The Nepal fact sheet can be used as an example.
- Students use their analysis plus additional research to come up with policy recommendations

Acknowledgements

This work was supported by the National Socio-Environmental Synthesis Center (SESYNC) under funding received from the National Science Foundation DBI-1052875. We are grateful to Cynthia Wei for support when developing the case. We also thank the International Forestry Resources and Institutions (IFRI) research network for providing data.

Creative Commons License

Please feel free to use and modify this work for your non-commercial needs, as long as you credit us and license your new creation under identical terms.



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.