



International Forestry Resources and Institutions
(IFRI) Research Program

CODEBOOK

(Online Version 1)

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All print and online publications that use IFRI data should acknowledge use by citing the dataset and this codebook as follows:

Database:

Ostrom, E., Huntington, H., Andersson, K., Banana, A., Castallenos, E., Chhatre, A., England, J., Ghathe, R., Gombya-Ssembajjwe, W., Karna, B., Leon, R., Liang, W., Marquez, L., Mereno, L., Newton, P., Persha, L., Tatomir, J., Salk, C., Tucker, C., Agrawal, A.

2016. IFRI dataset, Online version. 1st edition.

Codebook:

Huntington, H., Liang, W., Rice, M., Wilson, S.J., Agrawal, A.

2016. IFRI codebook, Online version. 1st edition.

Introduction

The International Forestry Resources and Institutions (IFRI) research program was founded in 1992 by Elinor Ostrom and her colleagues at Indiana University. IFRI focuses on how local groups, communities, and indigenous populations manage and govern their forests and trees. IFRI seeks to provide scholars, policy makers, activists, indigenous groups, and communities with systematic information and research findings about how people interact with forest resources at the community level and with what effect. Since the early 1990's, IFRI researchers have used a common set of research protocols and questionnaires to collect information about the demographic, socioeconomic, institutional, and other attributes of the relationship between forests, the communities that depend on them, and the institutions used to manage them. These rigorous field measurements and research efforts have created a unique database on forest use, governance, and how variations in human-environment interactions lead to different social and ecological outcomes related to forest systems.

IFRI data is useful for understanding how community efforts to use, manage, and protect forests lead to different livelihood strategies, carbon storage, and biodiversity outcomes in community forests. IFRI researchers, distributed across the human-dominated forested landscapes of East Africa, South and Southeast Asia, and Latin America have used the data collected over nearly 25 years to identify the characteristics of successful forest use. Members of the IFRI network also believe that sharing these data more widely with the community of scholars and practitioners interested in community forestry will support the goal of improving knowledge and decision making for community forest leaders, policy makers, practitioners, and others interested in such forests.

This online version of the IFRI database contains a subset of the most important IFRI research variables with broad relevance to those interested in community forests. This codebook describes the variables available in the IFRI public dataset, which can be downloaded from our site after completing a simple form. Note that information about data collection methodology can be found in the IFRI Field Manual (IFRI 2010). We encourage all data users to refer to this guide prior to using this data. The public dataset and the codebook are the result of the active and persistent efforts of the entire IFRI network, and thanks are due to the network as a whole. Cristy Watkins and Nicholas Jansen provided valuable support in finalizing this codebook.

We invite you to explore and use IFRI data, and to please contact us with questions or comments about the IFRI program or this database.

--Arun Agrawal, on behalf of the IFRI network.

Data Structure

Data is available for download from the IFRI website. Variables have been sorted into general themes reflecting their possible uses to the researcher. Note that information about data collection methodology for each can be found in the [IFRI Field Manual](#) (IFRI 2010). We encourage all data users to refer to this guide prior to using this data.

The data here has been aggregated to apply at the 'forest' level, as specified in the IFRI manual. Thus, data in some categories have been averaged. Note that NO/YES values were recoded to 0/1 in order to standardize the dataset.

Variables and Select Definitions

VARIABLE STRUCTURE

Information about each variable is arranged as follows:

<VARIABLE_CODE>

Question to which the code corresponds (units, if applicable).

Codes for possible answers.

THE FIRST LETTER

<VARIABLE_CODE>

Data here has been aggregated to the 'Forest' level (for a description of the IFRI database and the structure of the data therein, please refer to the [IFRI Field Manual](#)). However, data was originally collected at a range of different resolutions. The level at which each variable was collected is indicated by the first letter of the variable. This letter also corresponds to the form on which each can be found in the original IFRI database. The codes are: Forest (F), Association (A), User Group (U and G), and Settlement (S). Note that in the case of repeated visits to the same forest, only the data from the final visit was used.

CONDENSED VARIABLES

<VARIABLE_CODE>

Some variables represent a condensed version of a variable from the original IFRI database, in which the number of possible answers has been reduced into fewer distinct categories. These variables retain the name of the original variable in the IFRI dataset, but are indicated by the addition of a 'C' at the end of the variable name.

ROUNDED VARIABLES

Because all variables in the IFRI database are mapped to observations in the Forest questionnaire, there are instances when information about multiple use groups, forest products, or plots were aggregated to create an "average" value for the variable that could be used for a given forest. These values are rounded in some cases to the nearest integer value in case of categorical variables.

MISSING DATA OR 'BLANKS'

There are a series of codes that represent missing or blank data.

Code -99 = Indicates a cell for which there was invalid, missing, blank, or not applicable data. Note that in cases marked with a -99 it is not possible to distinguish which of the above applies.

DEFINITIONS*

USER GROUP: *A **user group** is a group of people who harvest from, use, and/or maintain one or more forests and who share the same rights and duties to products from the forest. It does not necessarily mean a formal group. What makes a user group distinct from a few random individuals collecting miscellaneous items is that the users know the shared duties and rights that they hold in common for harvesting from the forest. Shared rights and duties may have evolved through customary law and/or be prescribed by a legislative, judicial, or administrative body of a local, regional, or national government. For an individual to share rights and duties with others, general knowledge of the content of these rights and duties and the legitimacy of their enforcement (even if this is infrequent) should be present.*

FOREST ASSOCIATION: *A **forest association** is a user group (or groups) with rules, policies, and/or guidelines about a forest (or forests), some of which the users have prescribed for themselves. In the case where user groups prescribe rules, policies, or guidelines for themselves, the forest association will be considered a primary association. A small handicraft business, a large timber company, and a user group of mushroom gatherers can form a forest association or be individual forest associations. A secondary forest association is defined as two or more forest associations that work together to accomplish joint activities and/or objectives with rules, policies, and/or guidelines, some of which have been prescribed by the secondary forest association. A tertiary forest association (or parent organization) is defined as two or more secondary forest associations that work together to accomplish some joint activities and/or objectives with rules, policies, and/or guidelines, some of which have been -prescribed by the tertiary association.*

ORGANIZATION: *Refers to all **organizations** (harvesting or non-harvesting) that govern a particular forest or cluster of forests. It could be user groups, nonprofits, national agencies, etc.)*

*Note that a full set of definitions can be found in the IFRI Field Manual.

COUNTRY CODES

<CID>

Country in which data was collected.

UGA=1	MEX=7	HON=13
IND=2	COL=8	JPN=14
NEP=3	GUA=9	KEN=15
BOL=4	ETH=10	BHU=16
MAD=5	USA=11	THA=17
TAN=6	BRA=12	ECU=18

Outcomes: Forest Level

<FVEGCHANGE>

During the last five years, the area over which vegetation exists has:

- 0-Decreased
- 1-Same
- 2-Increased

<FVEGDENSEC>

(Note that this variable is a condensed version of <FVEGDENSE>)

The density of vegetation in this forest is:

- 0-Sparse
- 1-About normal for this ecological zone
- 2-Abundant

<FTREEDENS>

In the last five years, the density of trees on the forest land has:

- 0-Decreased
- 1-Remained the same
- 2-Increased

<FSPECIEDIVC>

(Note that this variable is a condensed version of <FSPECIEDIV>)

The species diversity in this forest is:

- 0-Sparse
- 1-Normal
- 2-Abundant

<FBUSHDENS>

In the past five years, the density of shrubs and bushes on the forest land has:

- 0-Decreased
- 1-Remained the same
- 2-Increased

<FCOVDENS>

In the past five years, the density of the ground cover on the forest land has:

- 0-Decreased
- 1-Remained the same
- 2-Increased

Outcomes: Plot Level

<PBASALAREA>

Total basal area in the forest (m²)

<PBASALPERM2>

Basal area per unit plot area (m² /m²)

<PTSPECIES>

Number of tree species in the forest

<PLOTNUM>

Number of plots in the forest

<PEROSION>

Is there evidence of active soil erosion in the forest plot?

0-No evidence of erosion

1-Minor erosion; surface vegetation and humus layer are absent

2-Major erosion; large gullies are present in barren soil

<PCROWNCOV>

The percentage of crown/canopy cover in the forest plot.

<PLIVESTOCK>

Is there evidence of livestock use within the forest plot?

0-No

1-Yes

<PINSECT>

Is there evidence of extreme damage by insects/pests within the forest plot?

0-No

1-Yes

<PEPIPHYTES>

Epiphytes are:

0-absent

1-few

2-abundant

Outcomes: User Group

<GCONDITIONC>

(Note that this variable is a condensed version of <GCONDITION>)

Most individuals in the user group rank the condition of this forest:

0-Sparse

1-Normal

2-Abundant

Predictors: Biophysical

The general climatic features of the region in which the settlement is located:

<OTEMP1> – <OTEMP4>

Temperature for seasons 1-4 (centigrade).

<OPRECIP1 – OPRECIP4>

Precipitation for seasons 1-4 (millimeters).

<OSITELAT>

Latitude of the site (decimal degrees).

<OSITELONG>

Longitude of the site (decimal degrees).

<OSITEELEV>

Elevation of the site (meters above sea level).

Predictors: Economic

<OEXCHRATE>

The exchange rate of local currency to one U.S. dollar (at time of data collection).

<OLABORFEM>

Standard wage labor rate per day at this site, for women (local currency, rounded to nearest whole number).

<OLABORMALE>

Standard wage labor rate per day at this site, for men (local currency, rounded to nearest whole number).

Predictors: Forest Level

<PELEVATION>

Plot elevation in meters

<FHOWOLD>

Approximate age of forest (years).

<FPLANTED>

Have people planted new trees among the original ones?

0-No

1-Yes

<FIMPROV>

Has there been any reforestation/improvement projects related to this forest?

0-No

1-Yes

<FSTEEP>

The steepness of the slope (degrees), if response to <FTOPOGRAPH> is 5 or greater

<FTOPOGRAPHC>

(Note that this variable is a condensed version of <FTOPOGRAPH>)

The topography of this forest is:

0-Mostly flat

1-Mostly rolling hills

2-Primarily steep

<FSIZE>

The size of the forest (hectares)

<FUNIT>

Has this forest been divided into forest management units?

0-No

1-Yes

<FGRADSCANT>

Are there graduated sanctions for rule breakers?

0-No

1-Yes

<FVALUECOMC>

(Note that this variable is a condensed version of <FVALUECOM>)

The commercial value of the forest is:

0-Below normal

1-Normal

2-Above normal

<FVALUESUBC>

The subsistence value of the forest is:

0-Below normal

1-Normal

2-Above normal

Note: This variable is derived from < FVALUESUB> in the original IFRI database.

<FFIREWHEN>

Do rules restrict when fires may be started in the forest?

0-No

1-Yes

<FFIREWHERE>

Do rules restrict where fires may be started?

0-No

1-Yes

<FMAINT>

Do rules restrict maintenance/improvement?

0-No

1-Yes

<FINFRA>

Do rules restrict Infrastructure changes (roads, bridges, ditches, etc.)?

0-No

1-Yes

<FSEEDS>

Do rules restrict types of seedlings or seeds that may be planted in the forest?

0-No

1-Yes

<FWILDGAME>

Do rules restrict types of the amount of wild game that may be trapped or killed in order to control degradation of the forest?

0-No

1-Yes

<FWEEDING>

Do rules restrict types of methods of weeding in relationship to the product?

0-No

1-Yes

<FRULEOTH>

Are there rules restricting any other changes that may occur in the forest?

0-No

1-Yes

<FRULES>

The total number of 1s (yes responses) for <FFIREWHEN>-<FWEEEDING>

<FCONSERVE>

(Note that this variable is a condensed version of <FCONSERVE>)

The types of conservation measures adopted in relation to this forest allow:

- 0-No local autonomy
- 1-Local autonomy to manage the forest

<FOWNLANDC>

(Note that this variable is a condensed version of <FOWNLAND>)

The legal (*de jure*) owner of the land on which this forest is located is:

- 1-Government
- 2-Community
- 3-Private
- 4-Open access

<FOWNRIGHTS>

Does the legal owner of this forest also hold the rights to harvest all of the forest products from this forest?

- 0-No
- 1-Yes

<FOWNSELLC>

Can the owner of the forest land sell all or part of it to other individuals or groups?

- 0-No
- 1-Yes

<FOBERVED>

Are harvesters of forest products from different user groups readily observed by each other while harvesting?

- 0-No
- 1-Yes

<FCOMPLYC>

(Note that this variable is a condensed version of <FCOMPLY>)

When penalties (i.e., a cash fine) are imposed for breaking rules:

- 0-Up to half of users comply with them
- 1-Most of users comply
- 2-Almost all users comply
- 3-Not applicable; no penalties

<FRULEDEFIN>

If more than one group uses this forest, are rules for using this forest well defined between different groups? (*i.e.* there rules that specify the actions that different groups follow?)

- 1-No
- 2-Yes

<FRULEFOLL>

Do the different groups generally follow the prescribed rules? (if 1 is response to <FRULEDEFIN>)

- 1-No
- 2-Yes

<FPEN1C>

The first time a user breaks a maintenance or monitoring rule related to this forest, the penalties are:

- 1-Verbal (public)
- 2- A cash fine or restrictions on harvesting
- 3-Discretionary decision
- 4-Court, prison, beating, expulsion, or permanent expulsion

<FPEN2C>

The second time a user breaks a maintenance or monitoring rule related to this forest, the penalties are:

- 1-Verbal (public)
- 2-Cash or restrictions on harvesting
- 3-Discretion
- 4-Court, prison, beating, expulsion, or permanent expulsion

<FPEN3C>

If a user breaks a maintenance or monitoring rule many times, the penalties are:

- 1-Verbal (public)
- 2-Cash or restrictions on harvesting
- 3-Discretion
- 4-Court, prison, beating, expulsion, or permanent expulsion

<FPENWHO1>

Who decides what kind of penalty is appropriate when a user breaks a maintenance or monitoring rule for the first time?

- 0-External actor
- 1-Individual within the community
- 2-External and internal actors

<FPENWHO2>

Who decides what kind of penalty is appropriate when a user breaks a maintenance or monitoring rule a second time?

- 0-External actor
- 1-Individual within the community
- 2-External and internal actors

<FPENWHON>

Who decides what kind of penalty is appropriate when a user breaks a maintenance or monitoring rule a many times?

- 0-External actor
- 1-Individual within the community
- 2-External and internal actors

<FDESIGNATE>

What is the official legal designation of this forest?

- 1- Government reserve
- 2- Government not-reserve forest
- 3-Community forests
- 4-Private
- 5-Protected area/ forest
- 6-Open-access

ASSOCIATION FORM PREDICTORS

<AKNOWRULES>

How many members of the forest association know about the rules that guide the association?

- 1-No one
- 2-A few people
- 3-Half the people
- 4-Almost everyone
- 5-Everyone

SETTLEMENT LEVEL PREDICTORS

<SMARKET>

Distance to market most frequently used by residents of settlement (kilometers)

<ADMIN>

Distance to administrative center (kilometers)

<SINDPOP>

Population of the settlement (individuals), at time of data collection

<SHOUSEPOP>

Population of the settlement (households), at time of data collection

<YEAR>

Year the settlement was established (calendar year)

<SAGE>

Age of the settlement at time of data collection (years)

<SORGREG>

Do local organizations exist to regulate the use of the other resources by settlement residents?
(e.g. commonly-owned or controlled drinking water source, pastures, irrigation water, etc.)

0-No

1-Yes

<SINTERACT>

In general, most residents interact with government officials:

1-Very often; government officials live in the settlement

2-Quite often; government officials visit the settlement almost every day, or residents visit the administrative center almost every day

3-Often; either government officials visit the settlement or residents visit the administrative center

4-Sometimes; neither government officials visit the settlement often, nor do residents travel to administrative centers

5-Seldom; possibly once a month

6-Rarely; maybe once in two or more months

7-Very rare; once or twice a year

<SCONSUME>

How many months in a year do residents consume their own food crops?

<SCOUNT>

Number of settlements per forest

USER GROUP LEVEL PREDICTORS

<GCONSERVE>

Individuals feel that the conservation measures adopted in relation to this forest are:

- 1-Too restrictive, more could be harvested from this forest without endangering its sustainability over time
- 2-About the right level of conservation
- 3-Too lax, if harvesting continues at this rate, the sustainability of this forest is endangered

<USTOVES>

During the past year, have individuals in this user group adopted more efficient wood-burning stoves?

- 0-No
- 1-Yes

<UCOOKERS>

During the year prior to data collection, have individuals in this user group adopted pressure cookers?

- 0-No
- 1-Yes

<UNEWTECH>

In the year prior to data collection, did individuals in this user group adopted any other individual technology that reduces the need for forest products?

- 0-No
- 1-Yes

<GBEE>

In the year prior to data collection, did individuals in this user group adopt improved bee-keeping techniques?

- 0-No
- 1-Yes

<GALTERMIX>

In the year prior to data collection, did individuals in this user group plant seedlings to alter species mix?

- 0-No
- 1-Yes

<GIMPVTECH>

In the year prior to data collection, did individuals in this user group use other technology for improving the productivity of the forest?

0-No

1-Yes

<GPLANTSEED>

Individuals in this user group plant seedlings:

1-Once a year

2-Every several years

3-About every five years

4-About every ten years

5-Rarely

6-Never

<GPLANTTREE>

Individuals in this user group plant trees:

1-Once a year

2-Every several years

3-About every five years

4-About every ten years

5-Rarely

6-Never

<GPLANTBUSH>

Individuals in this user group plant bushes:

1-Once a year

2-Every several years

3-About every five years

4-About every ten years

5-Rarely

6-Never

<GFENCE>

Individuals in this user group build fences or other barriers to protect parts of the forest:

1-Once a year

2-Every several years

3-About every five years

4-About every ten years

5-Rarely

6-Never

<GCLEAR>

Individuals in this user group clear undergrowth via burning or pulling:

- 1-Once a year
- 2-Every several years
- 3-About every five years
- 4-About every ten years
- 5-Rarely
- 6-Never

<GRMENCROACH>

During the year prior to data collection, have individuals in this user group attempted to remove encroachments (e.g., vines, twigs, branches, etc.) from the forest?

- 0-No
- 1-Yes

<GNURSERY>

During the year prior to data collection, have individuals in this user created a nursery to distribute seedlings?

- 0-No
- 1-Yes

<GRMLEAF>

During the year prior to data collection, have individuals in this user group removed leaf or needle litter from the floor of the forest?

- 0-No
- 1-Yes

<GGETHELP>

During the year prior to data collection, have individuals in this user group sought help from external authorities to improve vegetation growth?

- 0-No
- 1-Yes

<GREDHARVST>

During the year prior to data collection, have individuals in this user group reduced harvesting levels for medicinal plants?

- 0-No
- 1-Yes

<GOTHMETH>

Are there any other methods that the user group is using to protect, maintain, or improve the resources of the forest?

- 0-No
- 1-Yes

<GMAINT>

The total number of activities from <GPLANTSEED> through <GOTHMETH>

<UINDNUM>

Number of individuals in the user group

<UHHNUM>

Number of households in a user group

<UWEALTHDIF>

Given the local definition of wealth, is there a great difference in wealth among households in the user group?

0-No

1-Yes

<UHARVIN>

Individuals in the user group interact during cooperative harvesting within the forest:

1-Never

2-Occasionally

3-Seasonally

4-Year round

<UHARVOUT>

Individuals in the user group interact during cooperative harvesting outside the forest:

1-Never

2-Occasionally

3-Seasonally

4-Year round

<UMAINTIN>

Individuals in the user group interact during maintenance within the forest:

1-Never

2-Occasionally

3-Seasonally

4-Year round

<UMAINTOUT>

Individuals in the user group interact during maintenance outside the forest:

1-Never

2-Occasionally

3-Seasonally

4-Year round

<UPROCIN>

Individuals in the user group interact during cooperative processing within the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

<UPROCOUT>

Individuals in the user group interact during cooperative processing within the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

<UMKTIN>

Individuals in the user group interact during cooperative marketing/sales within the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

<UMKTOUT>

Individuals in the user group interact during cooperative marketing/sales outside the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

< USANCTIN >

Individuals in the user group interact during monitoring/sanctioning within the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

< USANCTOUT>

Individuals in the user group interact during monitoring/sanctioning outside the forest:

- 1-Never
- 2-Occasionally
- 3-Seasonally
- 4-Year round

<UCONTRIN>

Individuals in the user group interact through financial contracts within the forest:

- 1-Never
- 2-Occasionally

3-Seasonally
4-Year round

<UINTERACTINF>

Sum of variables <UHARVIN>, <UMAINTIN>, <UPROCIN>, <UMKTIN>, <USANCTIN>, and <UCONTRIN>, i.e. number of tasks during which individuals in the user group interact within the forest

<UINTERACTOUTF>

Sum of variables <UHARVOUT>, <UMAINTOUT>, <UPROCOUT>, <UMKTOUT>, and <USANCTIOUT>, i.e. number of tasks during which individuals in the user group interact outside the forest

<ULEADER>

Has any individual in this group acted as a leader (entrepreneur)—investing time, energy, and perhaps money—in trying to work out coordinated strategies for group maintenance, investment in upgrading the forest(s), or harvest of forest products?

0-No

1-Yes

<UINDLIT>

Number of literate individuals in user group

<UPRIMEDU>

Number of individuals in user group who have passed primary school

<USECEDU>

Number of individuals in user group who have passed secondary school

<UCOLLEDU>

Number of individuals in user group who have passed college

<ULITPROP>

Proportion of the user group that is literate

<GFODDER>

What percentage of the user group's need for fodder does the forest supply?

<GFUELWOOD>

What percentage of the user group's need for fuelwood does the forest supply?

<GTIMBER>

What Percentage of the user group's need for timber does the forest supply?

<GBIOMASS>

What percentage of the user group's need for biomass, green manure as farming inputs, does the forest supply?

<GFOOD>

What percentage of the user group's need for food does the forest supply?

<GNEEDOTH>

What percentage of the user group's need for other forest products does the forest supply?

<GDEPTOTAVG>

The average percentage of the user group's needs that the forest supplies (total of <GFODDER>, <GFUELWOOD>, <GTIMBER>, <GBIOMASS>, and <GFOOD> divided by five)

<LRESIDENTS>

Number of residents close to the forest

<LDISTANCE>

Distance that residents live from the forest (kilometers)

<LTRAVELDRY>

Time to walk to the forest in the dry season (minutes)

<LTRAVELWET>

Time to walk to the forest in the wet season (minutes)

<GDISTANCE>

Individuals in the user group live:

- 1- in and within 1 kilometer from this forest
- 2-between 1 and 5 kilometers from this forest
- 3-between 5 and 10 kilometers from this forest
- 4-more than 10 kilometers from this forest

<GINDSUBSIS>

Number of individuals in this user group who depend significantly on this forest for their own subsistence

<GINDCOMM>

Number of individuals in this user group who depend significantly on this forest for their family income arising from commercial activities (e.g., basket-weaving, carpentry, tea-stalls, restaurants, charcoal making, animal husbandry for sale of milk, wool and/or meat, collection of NTFPs for sale like pine resin, brazil nuts, tendu leaves, etc.)

<GHHSUBSIS>

Number of households (as locally defined) in this user group that depend significantly on this forest for their own subsistence

<GHHCOMM>

Number of households (as locally defined) in this user group that depend significantly on this forest for their family income arising from commercial activities

<GREGULATE>

Have individuals in this user group tried to limit usage of this forest by harvesting forest products from other communal or government forests?

0-No

1-Yes

<GOTHUG>

Are there other user groups who harvest from this forest?

0-No

1-Yes

<GNORULE>

Are there any individuals in this user group who do not participate in rulemaking for the forest?

0-No

1-Yes

<UHHOUT>

Number of households (as locally defined) in this user group whose members work outside the settlement

<UGRAZEOUT>

Do other grazing areas exist in this site other than the forest(s) in this site?

0-No

1-Yes

<UHHWEALTHY>

Number of households (as locally defined) in the user group that are usually regarded as being wealthy

<UHHPOOR>

Number of households (as locally defined) in the user group that are usually regarded as being poor

<UFUELCOOKC>

Most individuals in the user group use the following for cooking:

1- Electricity or gas

2- Oil

3-Wood

- 4-Charcoal
- 5-Small sticks or scrap wood
- 6-Weeds, leaves, or dung

<UCONFLICT>

During the last two years, have individuals in this user group faced any issues that have engendered conflict within the user group?

- 0-No
- 1-Yes

<UEFFECT>

During the past year, would you say that the level of conflict has been:

- 1-Disruptive of normal activities
- 2-Disruptive upon occasions
- 3-Channeled in ways that are not disruptive of normal activities

<UYEAR>

Calendar year the user group was established

<UAGE>

Age of the user group at the time of data collection

<UCOUNT>

Number of user groups for a forest

ASSOCIATION PREDICTORS

<ASEEDS1>

In the year before data collection what did the association do regarding plant seeds, seedlings, etc?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMAIN1>

In the year before data collection what did the association do regarding other maintenance?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AHARVEST1>

In the year before data collection what did the association do regarding harvest of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ADIST1>

In the year before data collection what did the association do regarding the distribution of forest products to local users?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ASELL1>

In the year before data collection what did the association do regarding the sale of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AREVENUE1>

In the year before data collection what did the association do regarding the distribution of revenue from the sale of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATIMING1>

In the year before data collection, what did the association do to determine the timing of the harvest of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AQUANT1>

In the year before data collection, what did the association do to determine the quantity of products to be harvested?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATYPETECH1>

In the year before data collection, what did the association do regarding the determination of the technology used to harvest forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AWHOAUTH1>

In the year before data collection, what did the association do regarding who is authorized to harvest forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATYPEUSE1>

In the year before data collection, what did the association do regarding determining the use of forest products (including religious uses)?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ARIGHTS1>

In the year before data collection, what did the association do regarding the sale of transferable rights to harvest forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ARENT1>

In the year before data collection, what did the association do regarding the rent of nontransferable rights to harvest forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMONCOND1>

In the year before data collection, what did the association do regarding monitoring the condition of the forest?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMONRULE1>

In the year before data collection, what did the association do regarding monitoring the conformance to rules?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ASANCT1>

In the year before data collection, what did the association do regarding the sanctioning (e.g. fines, punishment) of rule breakers?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ADISPUTE1>

In the year before data collection, what did the association do regarding arbitration of disputes among local users?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AINTER1>

In the year before data collection, what did the association do regarding interaction with higher authorities?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ASEEDS5>

In the five years before data collection what did the organization do regarding plant seeds, seedlings, etc?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMAIN5>

In the five years before data collection what did the association do regarding other maintenance?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AHARVEST5>

In the five years before data collection what did the association do regarding harvest of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ADIST5>

In the five years before data collection what did the association do regarding the distribution of forest products to local users?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ASELL5>

In the five years before data collection what did the association do regarding the sale of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AREVENUE5>

In the five years before data collection what did the association do regarding the distribution of revenue from the sale of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATIMING5>

In the five years before data collection, what did the association do regarding the determination of timing of the harvest of forest products?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AQUANT5>

In the five years before data collection, what did the association do regarding the determination of quantity of products to be harvested?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATYPETECH5>

In the five years before data collection, what did the association do regarding the determination of the technology used to harvest forest products?

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- 3-Coordinated activities, passed rules and modified rules

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In the five years before data collection, what did the association do regarding who is authorized to harvest forest products?

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- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ATYPEUSES5>

In the five years before data collection, what did the association do regarding determining the use of forest products (including religious uses)?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ARIGHTS5>

In the five years before data collection, what did the association do regarding the sale of transferable rights to harvest forest products?

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- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

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- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMONCOND5>

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- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AMONRULE5>

In the five years before data collection, what did the association do regarding monitoring the conformance to rules?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

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- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<ADISPUTE5>

In the five years before data collection, what did the association do regarding arbitration of disputes among local users?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AINTER5>

In the five years before data collection, what did the association do regarding interaction with higher authorities?

- 0-Nothing
- 1-Coordinated activities
- 2-Coordinated activities and passed rules
- 3-Coordinated activities, passed rules and modified rules

<AKNOWRULESC>

How many members of the forest association know about the rules that guide the forest association?

- 1- No one/A few people
- 2-Half the people
- 3-Almost everyone

4-Everyone

<ARULEEASY>

In the researcher's estimation the associations are:

- 1-Very complex, difficult for harvesters to understand
- 2-Relatively complex, but can be understood by harvesters through learning and experience
- 3-Easily understood by harvesters

<ARULECLEAR>

In the researcher's estimation, are the association's rules clear as to what behavior demonstrates following and breaking the rules?

- 0-No
- 1-Yes

<ARULEFLEX>

In the researcher's estimation, are the association's rules flexible in dealing with times of emergency or unusual problems facing particular members of the group?

- 0-No
- 1-Yes

<ARULEFAIR>

In the researcher's estimation, are the association's rules perceived by most members as fair?

- 0-No
- 1-Yes

<ARULELEGIT>

In the researcher's estimation, are the association's rules perceived by most members as legitimate?

- 0-No
- 1-Yes

<AFEMMEMC>

Have women been members of the executive committee or general representative body of the association?

- 0-No
- 1-Yes

<ASELECTC>

Most members of the association's executive committee or general representative body are:

- 0-Not elected
- 1-Elected

<AREMOVEUSE>

Is it possible for users to remove members of the executive committee or general representative body?

0-No

1-Yes

<AREMOVEEXTC>

Can an external or higher level authority remove the members of the executive committee or general representative body?

0-No

1-Yes

<AEDULEVELC>

On average, what is the education level of the members of the executive committee or general representative body?

0-Low

1-Average

2-High

<AMEETALL>

Are meetings held in which all members of the forest association are eligible to participate?

0-No

1-Yes

<AMEETFREQC>

The meetings at which all members may attend are held:

1-Once a week

2-Twice a month

3-Once a month

4-Once every three months

5-Once every six months

6-Once a year

7-Every other year

8-At irregular intervals

<AMEMATTEND>

At these meetings:

1- Almost all members attend

2-About half the members attend

3-Few members attend

<ACALLMEET>

Can members of the association call a general meeting when they want to discuss a special problem (e.g. extreme lack of rainfall or the breaking of association rules by members of the executive committee or general representative body)?

0-No
1-Yes

<ARULESUG>

Has the executive committee or general representative body of the association changed the rules as a result of suggestions from association members?

0-No
1-Yes

<ARECMAINT>

Are records of any kind maintained by the association?

0-No
1-Yes

<AEXAMINEBIN>

(Note that this variable is a condensed version of <AEXAMINEC>)

If association maintains records, are they available for examination by others?

0-No
1-Yes

<AAUDIT>

If the association maintains records of its accounts, are the records audited?

0-No
1-Yes

<ASUPERC>

Are the activities of the association supervised by a higher organization?

0-No
1-Yes

<ASCRC1MOSTC>

(Note that this variable is a condensed version of <ASCRC1MOSTC>)

The major financial sources (e.g. product sales, voluntary contributions, entry fees, fines, own taxes, external government or development agency transfers, etc.) for the forest association during the year before data collection were:

1-Internal
2-External
3-Internal and external
4-None

<ASUPPORTC>

(Note that this variable is a condensed version of <ASUPPORT>)

If the association did not receive any funds from external agencies and had to rely on contributions from members, its user groups, or other funds raised locally, could it support all of its expenditures?

0-No

1-Yes

<AEXTSPEND>

Does any other organization determine how the forest association spends or earns income?

0-No

1-Yes

<AWRITUSERC>

Do users or officials of the association have the power to change its mission statement?

0-No

1-Yes

<AENFRULESC>

The rules created by the association are enforced:

0-Internally

1-Externally

2-Both

<ACONFMECH>

Are any mechanisms available for resolving internal conflicts?

0-No

1-Yes

<AWORSEOFF>

Have any individuals in the forest association been systematically disadvantaged because of the its rules?

0-No

1-Yes

<ACUTOUT>

Have the relatively worse-off individuals of the forest association been cut off from benefits from this forest or substantially harmed?

0-No

1-Yes

<ADISTANCE>

Has the disparity between the relatively worse-off and the relatively better-off individuals changed?

0-No

1-Yes

<AYEAR>

Year the forest association was established

<ASPENDMOST>

What is the largest item on which the association spends its income?

- 1-Salaries of officials
- 2-Salaries of hired personnel
- 3-Court cases
- 4-Accountkeeping
- 5-Fees for specialized staff or contractors
- 6-Expenses for the community (e.g., school building)
- 7-Monitoring the forest
- 8-Guarding the forest resource
- 9-Maintaining the forest resource
- 10-Improving the forest resource
- 11-Travel and entertainment of the officials of the forest association

<APAI DGARDBIN>

The guards are:

- 0-Not paid
- 1-Paid

<ASEL GUARD>

How are guards selected to watch over the forest?

- 1-By election
- 2-By appointment
- 3-By lots

<AAGE>

The age of the association

<AGUARDBIN>

The guards are:

- 0-Present
- 1-Not present

<ACOUNT>

The number of associations within a forest

<ICOOPUSERS>

Do harvesters/users from different user groups cooperate with each other?

- 0-No
- 1-Yes

<ICONFLUSE>

Do conflicts among user groups affect the overall use of the forest? (long text)

- 0-No
- 1-Yes

<ICOORDORG>

Is there any coordination among organizations that govern this forest?

- 0-No
- 1-Yes

<ICONFLICTS>

Are there currently conflicts between organizational policies and what the users would like in terms of forest governance?

- 0-No
- 1-Yes

<IADVANUSER>

Do any of the user groups have advantages over all other groups for harvesting or using forest products?

- 0-No
- 1-Yes

<OPACTCOUNT>

What operational activities are undertaken by this organization? (*Operational activities are: the day-to-day decisions and actions taken by users of a forest and others as to when, where, and how to withdraw products; how to otherwise use the forest; or how to improve the condition of the forest, the monitoring of actions by others and imposition of sanctions and rewards, and the exchange of information about the forest (e.g.: harvesting of wood or thatch, planting trees, guarding the forest, assigning a fine, and filling out a report).*)

- 1-Planting/other maintenance
- 2-Protecting forest
- 3-Enforcing rules
- 4-Harvesting/using
- 5-Processing/Producing
- 6-Selling

<CCHACTCOUNT>

What collective-choice activities are undertaken by this organization? [*Collective-choice activities are: policy-making activities of users, user group officials, others, or an external authority about operational activities (e.g., the activities of an elected council deciding when the forest will be open for harvesting for a particular product or which harvesting technique will be authorized)*].

- 1-Planting/other maintenance
- 2-Protecting forest
- 3-Enforcing rules
- 4-Harvesting/using
- 5-Processing/Producing
- 6-Selling

<CONSTACOUNT>

What constitutional-choice activities are undertaken by this organization? Constitutional-choice activities are: the decision-making activities about who will make rules and how existing collective choice rules can be modified. (e.g. the decisions at an annual meeting about the setting up of a council to meet more regularly and determining what actions such a council could take)).

- 1-Planting/other maintenance
- 2-Protecting forest
- 3-Enforcing rules
- 4-Harvesting/using
- 5-Processing/producing
- 6-Selling

<TYEARS>

Years has this organization been involved in the governing of the forest

GOVERNANCE FORM PREDICTORS

Note: For the variables below, V=dummy variable to indicate the presence of an external forest governance organization (a forest governance organization is an organization that does NOT use the forest, but designs or influences the design of rules, policies, and/or guidelines about forest entry, harvesting, and maintenance. A forest governance organization also may be responsible for implementing policies or monitoring forest use. It could be a district or regional office of a national government ministry, a multinational organization, a private voluntary organization, or a nongovernmental organization.)

<VSUPPORT>

If the organization did not receive any aid from external agencies, could it support its expenditures?

- 0-No
- 1-Yes

<VPOSUSERC>

(Note that this variable is a condensed version of <VPOSUSER>)

Are the forest decision-making positions (the position of the officials) filled by forest users?

- 0-No
- 1-Yes

<VSUPERVISEC>

(Note that this variable is a condensed version of <VSUPERVISE>)

Are the activities of this organization supervised by a higher authority?

- 0-No
- 1-Yes

<VREMOVEEXTC>

(Note that this variable is a condensed version of <VREMOVEEXT>)

Can an external or higher-level authority remove the decision maker(s) in this organization?

0-No

1-Yes

<VREMOVEUSEC>

(Note that this variable is a condensed version of <VREMOVEUSE>)

Can forest users remove the decision makers?

0-No

1-Yes

<VRECMMAINT>

Does the organization maintain records of its accounts?

0-No

1-Yes

<VAUDIT>

If the organization maintains records, are the accounts audited or supervised in any manner?

0-No

1-Yes

<VINFOPROV>

Does this organization provide information to forest users on a regular basis? (e.g., silvicultural techniques, relationships among tree and grass species)

0-No

1-Yes

<VENFRULEC>

(Note that this variable is a condensed version of <VENFRULE>)

The rules created by the organization are enforced:

0-Internally

1- Externally

<VSEEDS1>

In the year before data collection what did the organization do regarding plant seeds, seedlings, etc?

0-Nothing

1-Coordinated activities

2-Coordinated activities and passed rules

3-Coordinated activities, passed rules and modified rules

<VACTCOUNT1>

Count of activities undertaken in the year before data collection

<VACTCOUNT5>

Count of activities undertaken in the five years before data collection

<VCOUNT>

Total number of external governance institutions