TENDA FOREST:

POSSIBILITIES FOR

POPULAR RESOURCE MANAGEMENT INSTITUTIONS

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TABLE OF CONTENTS

Introduction

Assume the goal of efforts to put Tonda Forêt Classée
(Gaya Arrondissement, Niger) on a sustained-yield management
basis is user population involvement in and responsibility
for developing and implementing use regulations (with Forest
Service backstopping local efforts on technical questions as
well as in certain critical rule enforcement situations).
Certain kinds of information then become indispensable to
deliberate efforts to move as far as feasible towards achieving
this ideal. This report outlines information investigators
must uncover. It presents a framework for structured inter-
views which will deal with a series of relevant political,
administrative, economic, financial and legal issues.

Running through this series of interview topics is a
theoretical argument. Alert investigators must be ready to
identify data that might be important. Understanding the
theory which underlies the investigation, at least in a
rudimentary way, will help make investigators autonomous
analysts, and help them to reason through a series of problems
which must be resolved if deliberate efforts at institutional
design for popular, sustained-yield management activities at
Tonda are to succeed.

It should also permit analysts and project personnel to
understand management successes and failures further down the
road in the project's development, so testing through practical
experiences of original management hypotheses can be fully

1

exploited, not only to solidify achievements, but to profit
from initial failures, by rectifying errors through a more
informed understanding of what went wrong. New efforts at
institutional design must not constantly reincorporate erroneous
policies of the past, which provoked failure of earlier insti-
tutions. Improving capacity to gradually correct institutional
weaknesses should permit progressive advance towards the goal
for Tenda Forest set out above. In should also, in conjunction
with Guesselbodi Forest data along the same lines, aid Bureau
Technique Forestier (BTF) personnel substantially in their
continuing search for a (range of) feasible approaches to
involving user populations as participants - responsible parti-
cipants - in management of resources upon which their welfare
depends.

Theoretical Assumptions and
Considerations Guiding Research

BTF is trying to set up popular management institutions
without knowing either the form(s) they should take or the
ways they should operate. It is in other words designing
institutions under conditions of uncertain information, not
omniscience. The struggle will be to overcome or at least
reduce uncertainty about feasible management institutions
and activities to the point where the Bureau can outline
generally relevant approaches to design and/or institutional
forms, and then involve local people in appropriately adapting
these approaches in light of local conditions.

Those who want to craft effective forms for popular participation in resource management need to know roughly what they're looking for if they are to propose feasible institutions. They also need a sense of constraints which designs must respect if proposed forms are to be successful.

Admission of uncertainty in this enterprise is the beginning of wisdom.

BTF is trying to shift from the top-down model of resource management (and administration in general) prevalent in Niger over at least the past eighty years to a bottom-up approach. Information necessary to respond to unanswered questions concerning both institutional forms and technical issues is available only at the local level.

Principles inherent in top-down and bottom-up models of administration are not the same. Design elements must be fashioned, in each case, to accomplish different tasks in order to achieve the same goal of resource management. In the top-down model, control is imposed on events in an environment — things people do, the evolution of natural phenomena — by field agents of the administration. The problem for designers of such forms is to build in means by which those who head organizations can monitor and effectively direct activities of their agents to achieve desired goals. The administration has final responsibility for initiating and nurturing activities which promote the public good.

In the bottom-up model, by contrast, the point is, crudely,

to get people to think for themselves and to define public goods and activities in light of their own reflections about problems. This assumes that people can be brought, under certain conditions, to exhibit effective concern for their long-run self-interest, or enlightened self-interest, e.g., preserving renewable resources from destruction, as well as a legitimate concern with short-term self-interest.

Policies promoting popular pursuit of enlightened self-interest, as here defined, do not just happen. They depend upon certain kinds of institutions which make it possible to think - reasonably - in those terms. Inevitably, uncertainty will characterize design efforts no matter how insightful these efforts: we can not know the future, nor make reliable predictions about events which lie more than a little bit beyond the present. For example, we cannot know who will invest what, and when if ever it will become relevant and available for an action of concern to BTF resource management efforts (e.g., manipulation of bee chromosomes enabling a new variety of bee to exploit flowers whose honey was hitherto useless for honey production).

Bottom-up institutions then must encourage people to think for themselves, to seek information, and to use it in public efforts to achieve goals dictated by enlightened self-interest. This is participation in the large sense. People must come to see the necessity of designing and redesigning institutions in an evolving, partially dynamic situation, to meet their interests in the short, but also in the long run.

Management of Resources

   Management of renewable natural resources means apportioning
demand to supply if there are shortages, and if this be the
case, increasing supply in the long run where it is not possible
to do so in the short run. By implication, no management is
needed when available supplies exceed current and forseeable
demand.

   For management to occur under conditions of scarcity,
certain behaviors, e.g., reforestation or bush burning, must
be shaped by institutions so more appropriate actions lead to
preferred outcomes. These latter are usually particular events
in the environment such as more young, healthy, growing and
protected trees, or controlled, cool, precocious bush fires
instead of late, hot, wild ones.

   Ordering behavior means, quite simply, channelling it by
imposing effective rules which lead people to do certain things
and not others. (Those confused by) the term "institutional
design" (can think of that activity as simply) creating sets of
rules which work to get people affected by the rules to do
things somebody wants them to. Institutions are patterns of
human activity; rules or laws are the bones which make up the
skeletons shaping those patterns.

   Like bones without calcium, rules without enforcement
procedures take on the wiggly character of cartilege: they
don't really structure because they bend under pressure.
Means to assure enforcement -- efficient and sure imposition of
                                        Sanctions

for violation of rules - are an indispensable element of
institutional design. Somebody - officials - has to be led
by a back-up set of regulations to enforce the primary rules
governing members' conduct.

Imposition of sanctions implies capacity to affect someOne's
self-interest, generally by an undesir̲a̲b̲l̲e̲ action reducing
welfare, i.e., a punishment or deprivation of some advantage.
Effective rules therefore depend upon someone's capacity to
do unpleasant things to someone else, against the latter's will.
Otherwise laws simply will not be respected over the long run.

But capacity to do nasty things to people in order to get
them to behave in desirable ways, ways which promote achievement
of the enlightened self-interest of an individual or group,
implies and frequently involves capacity to do nasty things to
people to get them to do things officials want without regard
to the enlightened self-interest of a group of individuals.
Thus the germ of oppression is always contained in the power
to sanction necessary to uphold rules.

Institutional rules can also be designed to encourage
certain kinds of behavior by positive rewards. They can help
insure that those who work, who invest time and effort in
resource management and productivity, will be rewarded for
their actions, either through payments financed by monies
collected from the user community, or by protection of their
rights to particular resources - individual trees, or honey,
or arable fields - for creation of which they have been respon-
sible.

Necessary Data

Going Concerns Which Make
or Enforce Resource Rules

This brief review of fundamentals of institutional design suggests the kinds of data investigators should pursue. These include indicators of, or descriptions of existing institutions (going concerns) which now do or potentially could have an effect on local resource management efforts. Such institutions include national, prefectoral, subprefectoral, cantonal and local (village and hamlet) general administration jurisdictions They include the Forest Service at these various levels, as its personnel make and enforce resource management rules. Voluntary associations like the Samaria may be important as well.

Land and Tree Tenure;
Judicial Processes

In studying these institutions, it is particularly important to find out the roles they play, if any, in establishing rights in trees and land, and in protecting or weakening them through settling cases which involve disputes over those rights.

Postive Motivations to
Help in Management Efforts

Investigators need to detect and detail the extent and range of users' desires for forest products and by-products. Opportunities to farm, or pasture animals, or set up bee hives, or cut wood, or collect Andropogon grass for mat-making and other "useless bush" by-products, or fire the bush are all examples of goods or activities people apparently desire

concerning Tanda Forest. These can all be used as bargaining counters in negotiations to decide on resource management goals and priorities among these goals, and in defining how local people will participate in or contribute to achievement of these goals.

Financing Possibilities

Researchers need to study these user desires for possibilities they may involve to finance resource management activities, either by generating taxes or through users' investment of labor in maintaining and developing certain resources.

Promoting User Groups' Participation
in Resource Management Undertakings

Control of bargaining counters and ability to raise taxes or labor contributions from these activities may offer opportunities to increase popular participation in resource management by motivating user group representatives to publicly defend or advocate extension of their groups' rights. From this debate may come a heightened public concern for and interest in ways to improve resource productivity.

Settling Contract Provisions

Finally, investigators should seek evidence of any existing contracts concerning resource exploitation, e.g., details of farming arrangements within the forest, which might serve as useful models for resource management contracts, or might give clues and insights about provisions to avoid in establishing such legal arrangements in the future.

Interview Elements

A. Identify <u>relevant jurisdictions</u> and <u>going concerns</u>. What
is the population or membership of each, and how can
they be identified for purposes of establishing user
communities? Who does one have to/can/might rely on for
resolution of forestry cases?

This inquiry must developinformation about:

1. administrative jurisdictions and their interrela-
tionships;

2. local voluntary associations which already exist
(what are their activities? how are they organised?
what sorts of powers can they exercise? who exer-
cises the power? what are the weaknesses of these
organizations? how frequently do they function?);

3. possibilities for creation of <u>new</u> local organizations
specifically tailored to manage resources, e.g., men
who are now farming adjacent fields and who will work
together for purposes of planting trees, maintaining
them, etc. (what will creation require? how will
we know if they will be viable? what are the
critical points of motivation and control?)

(arrondissement Forestry Service head)

Daouda suggests almost all forest users (possible
exception: some Fulbe herders) from local area are
administratively enrolled on the Gaya canton chief's
lists. This must be verified.

4. This leaves unresolved the issue of Niamey firewood
merchants, woodcutters (where do <u>they</u> come from?).
Are there other users we don't yet know about whose
demands represent a potentially important impact on
wood and wood products supply produced by Tenda?

5. What should be done about wood merchants? What about
woodcutters? Can they be organized? Answers depend
in part on who they are, administratively.

B. Identify <u>relevant tree tenure rules</u>. What is the effective
application of the Forestry Code in the Tenda area, both
inside and outside the Forest, as opposed to the formal
provisions of the Code? What are the local, "customary"
tree tenure rules, e.g., concerning control over neré
trees, in the various jurisdictions adjacent to the
Forest?

1. How much, if any, timber stealing is going on in the
Forest?

2. What does the current Forest Service system of control
look like in practice, i.e., to what extent and how
is the Forestry Code applied in and out of the Forest?
Are people satisfied with this system? Does it have
any potential to motivate participatory management
schemes (willingness to provisionally turn Code imple-
mentation over to local jurisdictions which would like
to manage wood resources, so long as they met minimum
criteria of tree capital preservation or increase,
might become a bargaining point in negotiations)?

3. Do "customary" rules concerning tree tenure vary
from village to village? If so, how? Is it possible
to standardize these regulations? Is it necessary?
How could standardized regulations be achieved? What
are the rule-making procedures? If it is not possible
to establish uniform rules, is it possible to function
without them?

C. Identify <u>relevant land tenure rules</u>. What are local land
tenure rules:

1. Inside the Forest?(e.g., how has access been affected?)
2. Outside the Forest
3. How do these affect tree tenure rules, if at all?
4. Do local people generally face a shortage of land,
either directly productive field land or fallows?
How many people are concerned about this? Try to

work out a rough estimate of what's at stake in terms
of future trends. Have to develop at least an overall
sketch of political history of (four(?)) villages and
hamlets surrounding forest area?

a. The political histories should seek to identify
historical conflicts which might generally create
problems for new jurisdictions designed to manage
Tenda Forest, either by making rules, by enforcing
them, or both.

b. Do settlement patterns of these communities (in-
cluding development of hamlets) suggest access to
Forest land is an important bargaining counter?

c. What does the answer to b. above suggest about
necessity of pursuing new/modified approaches to
soil fertility enhancement outside the forest in
order, as Mamadou notes, to assure long-term
stability of the system in face of growing popula-
tion pressure? If it is possible to arrange things
so Tenda is a teaching laboratory for peasants from
surrounding communities, and to lead them through
participation in Tenda management activities to
various reforestation activities on their own lands,
it is an opportunity not to be missed.

5. Do we have to devise some system to control access,
not only to stop the bit-by-bit, nibbling-to-extinction
syndrome, but to work out the details of access?

a. How do we finesse defusing all access to Tenda lands
as a political resource which the locally powerful
(chiefs, notables, prosperous peasants) will other-
wise exploit to strengthen their own positions or
control over clients (actual or potential) with an
eye to dominating resource management activities?

1. lottery, with repeated rounds until quota of
forest farmers is filled, simply taking names

off tax rolls and proceeding through a drawing
precess (what are the administrative costs of this
procedure, particularly those involved in contacting
individuals chosen but not present at the drawing,
and perhaps absent on labor migration?)

ii. lottery as in a. above, but drawing restricted
to those who volunteer their names, with winners
selected in a single round of drawing (does this
open the door to the locally powerful to prevent
non@-clients from submitting their names?)

iii. lottery, with winner's option to sell off his use
right to interested non-winners, either for a
fixed fee or at whatever market will bear (would
this induce greater interest in use rights, moti-
vating villagers and others to devote time and
energy to forest management, and/or to take an
interest in what's happening in Tenda, physically,
and is creation and maintenance of rule systems
governing use? Is the individual's probability
of winning great enough to sustain interest? The
lottery makes all "equal"; does it thus encourage
gestion populaire participation among potential user
community members?)

iv. some form of social redistribution (those who are to
farm forest must demonstrate need for land...this
implies extraordinary costs to verify applicant
need. If these are reduced by relying on local
opinion to decide who most needs land, will locally
powerful see to it that their clients are chose?
Is this necessarily bad? How costly would this be
to program success? To rig things too strongly
in favor of egalitarianism may lead locally powerful
to resist, and to a stillborn popular management
effort).

D. What are the <u>judicial processes</u> which handle disputes
concerning these issues? Are there <u>alternative form</u>
to which individuals can go with cases, in order to
seek recourse/redress for rule violations? Do we want
to promote one or some of these as opposed to others?
What are the issues which are <u>not</u> liable to redress,
i.e., what are the <u>exposures</u> under which users labor,
where they can expect no help (now/ later?) if their
efforts fail or if they are bested by others?

E. What are the positive incentives which can be used by BTF
to promote participation in and compliance with various
management activities? How many of these are viable
now? Can any be strengthened, through technical or
institutional innovations? Which are too weak to hang
the future of the management program on?

   1. Bush fires: planning and execution under controlled
conditions (authorization to burn might well be
traded in return for compliance with ecologically
sound [early] burn dates, back-burning precautions,
etc. Can herders be led to greater efforts to control
animal damage to crops in return for a say in deciding
what areas to burn [and so increase locally-available
pasture resources in the dry season]?)

   2. Agricultural usufruct privileges on forest lands (how
long should the usufructory right last? one year? two?
until trees shade out crops? what are the implications
for popular interest in the access lottery or other
access control mechanism [see above, C.5., pp. 11-12]
and willingness to care for trees already on the land?)

   3. Beekeeping: can hive placement be regulated? can the
bees be kept within a home range, or will they poach
nectar at long distances, reducing the value of BTF
or management association control over hive placement?
Can the negative effects of current honey collecting

efforts (uncontrolled bush fires) be reduced?
(Critical issues: when do beekeepers burn? are they
likely to do so at particularly dangerous periods of
the year? can things be done concerning collectively
controllable goods, e.g., favorable hive sites, plan-
tation of certain flowering trees in favorable sites,
which will improve honey off-take [the apiary consul-
tant's information about bees' nectar-collecting
patterns may give us technical improvements, convert-
ible into bargaining counters - separable incentives,
which can be accorded or withheld from individuals,
rather than only from an entire user group as a unit -
to cement beekeepers' adherence to local management
associations.])

4. Control over wood exploitation. What is the local
demand for firewood (villagers living in areas adja-
cent to the Forest, Sorko fishermen, Gaya woodcutters,
other woodcutters)? What is the non-local demand?
My position on this is that we want to encourage local
groups to develop forest resources; there must almost
certainly be a quid pro quo for their efforts in this
regard, and we may find the most efficient way to do
it is to permit people to cut in there (or local
groups, e.g., samaria) to cut and market wood in order
to raise funds for management activities which may only
be undertaken on a paid basis.

a. Technical efforts to establish forest productivity
and to monitor success of efforts to improve forest
productivity will be critical here. Once rough
estimates can be developed along these lines,
management can take the form of apportioning
harvesting rights to user groups consonant with
tree capital preservation or creation.

b. Methods by which harvesting quotas are distributed
will constitute another delicate issue, similar to
according access to forest lands. Is a lottery

indicated here as well? Is this a decision for local user groups?

c. I do not now see great advantage in rigorously assessing overall actual and potential demand. This would involve, for potential users, all sorts of speculation about who's likely to get involved under such and such a set of assumed circumstances. For actual users, it assumes ability to determine which ones satisfy how much of their wood demand through harvesting Tenda Forest wood. This would be costly, in light of necessity to carefully train enumerators, control their activities, etc.

d. It appears more useful to me, in light of the popular sustained-yield management goal for all forêts classées in Niger, to work towards a villager/herder system of assessing the evolution of supply-demand relationships in any managed forest. This will necessarily be a crude measure, but it will encourage environmental awareness among users. Ideally, popular perceptions that wood demand is threatening to outstrip supply will prepare the way for efforts either to control demand or increase supply.

It appears a priori justified to assume villagers can develop roughly accurate observations of wood supply-demand trends, just as herders can tell when pastures will or won't suffice in a given year. Certain indicators – development of wood markets and evolution of local wood prices – will provide a constant flow of data about supply-demand conditions, assuming markets are not being artificially manipulated.

5. Grazing rights: these should provide a substantial
incentive to encourage herder organization, if this
becomes desirable.

6. Seko (Andropogen) grass harvesting may provide an
important incentive to control a wider user community,
if individuals come to the Forest from as far away as
Gaya Arrondissement Forestry Service head Daouda says
they do. [v. costs of controlling access]

F. Financing management activities poses an interesting problem.
The bargaining counters retained by BTF over forêt classé
policy evolution should be deliberately exploited, vis-à-
vis both users and those in the bureaucracy who would
resist attempts to develop autonomous bases of local
activity which are essentially self-financing, and there
fore viable over the long run.

1. The positive incentives discussed above may all
involve possible auto-financing opportunities. Those
who wish to benefit from use of goods produced by the
forest in one fashion or another can legitimately be
expected to contribute to financing collective effor
necessary to assure goods continue to be produced.

2. Farmers could be taxed, either in cash, for the priv
lege of cultivating forest lands, through the same
sort of permit system, or in kind, for a percentage
of their harvests, or for the wood they produce in
clearing a given piece of land (if this is found to
agronomically justifiable.) [It is unclear to me
whether (a) farmers burn wood they cut on the land
take it away for other uses, and (b) if they do bur
wood, as opposed to small brush and branch residues
as well as grasses, whether the wood potash is a
necessary ingredient in forest soil fertility; this
should be investigated.]

3. Beekeepers who wish to place hives in the forest could be taxed for a part of the produce. If average beekeepers are earning 100,000-200,000 CFA/annum on the produce of their hives, they could be required either to purchase a permit to install hives in the forest, or to turn over a proportion of their honey, or a proportion of the receipts to the association.

4. Woodcutters could be taxed for a proportion of the wood they cut, or the proceeds they earn from selling forest-cut firewood and construction materials.

5. Some administrative issues arise in making choices about taxation systems. Taking in kind instead of in cash might be preferable in many cases since it would reduce the advantage enjoyed by relatively wealthier individuals in gaining priority access to forest resources; this would appear to be a prima facie argument against a permit system, since presumably only those with cash up front could get into the game. Obviously this depends on permit fee levels. It may be that poorer members of the community are not only not able to finance permits prior to exploitation, but that they cannot even fund the exploitation, and so needn't be taken into consideration.

6. If hunting becomes a possibility in future, licenses and/or taxes on kills could be instituted.

G. Potential opportunities for cooperation between different user communities and the extent to which such cooperation can motivate user communities to insist other user communitites respect use regulations must be examined.

1. One potential example on these lines is coordination of burning within the Forest. Three groups seem now to be interested in legal burning: farmers, herders and beekeepers. It may be two or three of the groups can work together for certain purposes, e.g., burning

by herders to produce grasses during the dry season
or burning by farmers to make sure herders don't get
into their crops before these are safely harvested
and stored. Careful placement of beehives might be
fitted into this coordinated approach, which would
reduce danger of hot season intense fires if done
early enough after the rains.

2. If these efforts are successful, violation of nego-
tiated agreements could give rise to litigation between
user groups, or by one user group against a member
or members of another. This would be salutory if
violations were somehow sanctioned on an equitable
basis and if case outcomes led users to see the value
of use regulation. Establishing and enforcing one
set of productive regulations might well give users
the confidence in their ability to carry off self-
government necessary to go on to more elaborate, and
equally or more productive arrangements concerning
other problems (what these might be I have as now no
idea or even inkling; such things may be dreamed up
by local users if and when they begin to see value
in designing their own institutions)

H. Contracts between users and user associations, or between
users and the Forest Service, will have to be thought
through. This will more likely be a productive exercise
once necessary information has been collected and basic
policies regarding use have been (provisionally) chosen.
How detailed contracts must be, and what details should
be, will depend on prior decisions concerning how incen-
tives to participate in management should be structured.
Obviously there will be great leeway for trial and error
here; results will have to be closely monitored to
refine future contracts where necessary.

tested/

1. If contracts are to be changed, and are being tested,
   users should be so informed. Otherwise, subsequent
   modifications of terms of access might leave some
   users feeling abused. This would bode no good for
   user willingness to abide by (still delicate) local
   use regulations.

2. BTF might initially make all contracts of one-year
   duration, to preserve flexibility to readjust con-
   tract terms in light of new information. Users can
   be expected to protest if terms are toughened; BTF
   must be prepared to justify such changes to users'
   satisfaction, in light of the latter's long-term
   interests if not of their short-term ones.

3. If users are prepared to participate on an experi-
   mental basis, without contractual guarantees, this
   possibility must be considered as a way of maintaining
   flexibility to shape institutions. BTF does not now
   know with any certainty what consequences will flow
   from technical or popular management policies
   (although of course educated guesses can be made in
   both areas). Prudence suggests keeping open as many
   options as possible. Skillful public relations and
   communication of project goals, and of BTF uncertainty
   about how to achieve them might function as an invi-
   tation to users to participate in crafting appro-
   priate institutions. When and if they take that
   initiative, probabilities successful approaches to
   gestion populaire will be discovered should greatly
   increase: users who are actual or potential members
   or officers of management jurisdictions can be expected
   to have more information about and feel for locally-
   feasible institutional designs than outsiders. Experts
   can make suggestions based on general principles;
   local users will have to tailor the institutional
   cloth to fit the forms of local bodies politic.