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Description and Examples of MAPP

Method for Impact Assessment of Programmes and Projects

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MAPP: A Participatory Method for Impact Assessment of Programmes and Projects

a) Background

MAPP is a participatory Method for Impact Assessment of Programmes and Projects. With MAPP, farmers are evaluating the impacts of development interventions following a logical structure. By doing so, they also express their ideas on how programme interventions can be improved for further development. The first version of MAPP was developed in 1998 by Dr Susanne Neubert at the German Development Institute (DIE). Firstly, she applied the method in two large programmes in the agricultural sector in Mali and Burkina Faso.[1] Then several organisations applied MAPP and from their feedback, the method was then further improved. Today MAPP has been applied on all continents in more than 10 countries[2] and is widely known and used by German and Swiss development agencies. It has proved to be a suitable method for impact evaluation in many sectors, and for different types of programmes.

Why is MAPP innovative?

With MAPP factual changes over time are analysed in a first step, whereas reasons for these changes, e.g. programme interventions or other activities are identified and attributed in a second and third step. With this open and context-orientated approach not only planned, but also unplanned impacts can be identified. With MAPP, a specific programme is evaluated in relation to other ongoing programmes; and net impacts can be estimated against gross development trends.[3] The results of the impact evaluation can be used as a starting point for a participatory development planning. This empowers farmers and fosters their ownership towards the development interventions. MAPP integrates farmer's ideas into development programmes and thus also serves as a learning tool. In principle MAPP is a qualitative tool, but includes some quantitative elements. For example, it works with a point system for evaluating change and impact. Up to a certain extent this point system allows the aggregation of results. With MAPP the "attribution gap" between impact and cause is bridged systematically by applying an influence matrix. Here positive or negative influences are evaluated against development indicators.

b) Description of MAPP

MAPP is based on group discussions. The members of the groups are usually benefiting and non-benefiting farmers. However, a range of other stakeholders can also join, as in particular stakeholders from other levels (programme managers, extensions services etc.). In general it is more interesting to apply MAPP in mixed groups comprising both sexes and different socio-professional groups. This helps to get a comprehensive picture about an issue and to assure vertical information flow. Also, in mixed groups different perceptions can be discussed simultaneously. If relevant controversies occur, different colours and points can be used in the matrices. Since different views often serve as a

[1] PGRN (Programme de Gestion des Ressources Naturelles) / Mali (Worldbank), PATECORE/Burkina Faso (German Technical Cooperation / German Bank of Reconstruction)

[2] Peru, Bolivia, Brazil, Nicaragua, Niger, Chad, Mali, Burkina Faso, Cameroon, Tadzhikistan, Uzbekistan, Kyrgyzistan, Moldavia

[3] This can be done by comparing the results of tool 2 *Trend analysis* with which gross development trends are evaluated with tool 3 the *Influence matrix*, with which net influences of interventions are estimated.

starting point for change, they can be very helpful.[4] MAPP can be facilitated either by an evaluation team, or by a single local or international consultant, who are ready to undergo a days training on MAPP. In the evaluation process the farmers themselves play a central role. After an introduction, a literate farmer can come to the board and complete the matrices following the points and explanations given by the group. During this time, the evaluator is facilitating and asking any key questions. This system also enables illiterate group members to understand and fully participate in the evaluation.

The main tools of MAPP

1. *Life curve:* This shows the overall development trends in the community along a certain time frame beginning, before the programme started and ending at present.
2. *Trend analysis:* With this matrix, detailed development trends are evaluated over the same time period. Firstly, the indicators for development are defined. MAPP suggests evaluating the following key dimensions: changes in living standard, access to resources, expansion of knowledge, participation on rights and power with always 2-3 sub-indicators. Following completion of this, the overall trends for each dimension can be noted.
3. *Cross-checking:* Practical cross-checking tools such as transect walks along development interventions within the community can be very useful at this point. Transects can give some very helpful information about the scale, relevance and maintenance of interventions. In addition, they provide some information about poverty dimensions in the community, common farming systems and soil management methods.
4. *List of interventions and activities:* All relevant interventions as well as all donor and partner organisations active in the community are listed and ranked according to their day-to-day relevance. In addition to this, contributions of the beneficiaries are evaluated in terms of labour and finances by points. By estimating the relative cost-benefit ratio some conclusions can be drawn concerning the sustainability of the interventions.
5. *Influence matrix:* This matrix helps to evaluate the influence of all interventions on each development indicator. Afterwards, the passive and active sums are calculated. The active sum shows which intervention had impacts on the most development indicators, whereas the passive sum shows which development indicators did or did not perform.
6. *Development and impact profile*: This chart serves as an interpretation tool and summarizes some results of MAPP. In addition the main stakeholders who are most responsible for certain changes are isolated thus enabling the development profile to be drawn. This gives an impression of the robustness or vulnerability of the development.
7. *Participatory development planning*: The development indicators which didn't perform are isolated and a vision is developed by farmers on how it would be, if the situation concerning this bottleneck were improved. Then, ideas are developed on how problems could be resolved to get closer to this vision and steps for implementation are agreed upon. Several persons of the community are assigned, who are willing to start with a concrete activity, e.g. write an application for credit.

[4] However, constraints for mixed groups exist, e.g. if women cannot speak up in the presence of men, as is the case in some nomadic societies. Then MAPP should be applied in sub-groups.

Interpretation, integration in large data sets and use of results

The first step of data interpretation can be completed with farmers by drawing the *Development and impact profile*.[5] By looking at the *Trend analysis* and *Influence matrix*, a discussion about positive and negative trends, positive and negative influences should be launched, and the *Participatory development planning* can be started.[6]

A MAPP-impact evaluation can stand on its own or it can serve as an element of a larger evaluation, e.g. of a comprehensive country programme evaluation. In this case it makes sense to integrate MAPP-results in a fact sheet together with other data.[7] In large programmes or in sector wide evaluations different MAPP-sessions, e.g. in different countries can be summarized in synthesised tables, e.g. using a traffic light system.[8] In addition to this, MAPP can be combined with a quantitative rigorous impact evaluation. This then complements and explains quantitative results, thus making them more useful for farmers.[9] **Attention:** By interpreting the MAPP-data, it should be remembered that points are not metric numbers. Therefore, they should rather underpin the qualitative analysis than be merged, multiplied or deducted from each other.

Requirements and costs

One MAPP-Session takes approximately two days. If several MAPP-Sessions are applied, the time requirements increase accordingly to the number of groups. Besides transport needs, a board or flip chart and writing equipment are needed. The cost of a MAPP-Session depends largely on the fees taken by the consultant. If a qualitative sampling is used and local consultants are evaluating, the costs are significantly lower.

c) Links to further information on MAPP

SDC (Swiss Agency for Development and Cooperation) (2008): Report on the Effectiveness of Swiss Development cooperation in the water sector. http://www.deza.admin.ch/en/Home/Documentation/Publications

Neubert, S. et al. (2000): Armutsmindernde Wirkungen des Ressourcenmanagementprojekts PATECORE in Burkina Faso, Berichte und Gutachten 3/2000, DIE Bonn (German, French)

– (2000): Social Impact Analysis of Poverty Alleviation Programmes and Projects: A Contribution to the Debate on the Methodology of Evaluation in DC, GDI Book Series No 14, Frank Cass, Berlin

– (2004): Akteurszentrierte Wirkungsanalyse in der Entwicklungszusammenarbeit – ein Leitfaden. In: ded-Brief 3/2004. Bonn. http://www.ded.de/cipp/ded/custom/pub/content,lang,1/oid,5795/ticket,g_u_e_s_t/~/Downloadseite_

– (2004): Impact Analysis of Development Cooperation is Feasible. Briefing Paper 4/2004, Bonn: Deutsches Institut für Entwicklungspolitik/DIE

Thilo-Körner, M. (2004): Wirkungsanalyse von Wasservorhaben in der Durchführungsphase. Forschungsprojekt des BMZ: „Wasser und Armut“, DIE Bonn 2004

[5] After having finished the MAPP-session, the matrices should be left in the communities as they are often used for further discussion among farmers.

[6] It can also be very interesting to compare the net impacts in the influence matrix with the number of points in the trend analysis of the final year. Sometimes the impact of an intervention might be high, but the overall situation not yet good. This means that the programme activities should be strengthened and/ or extended.

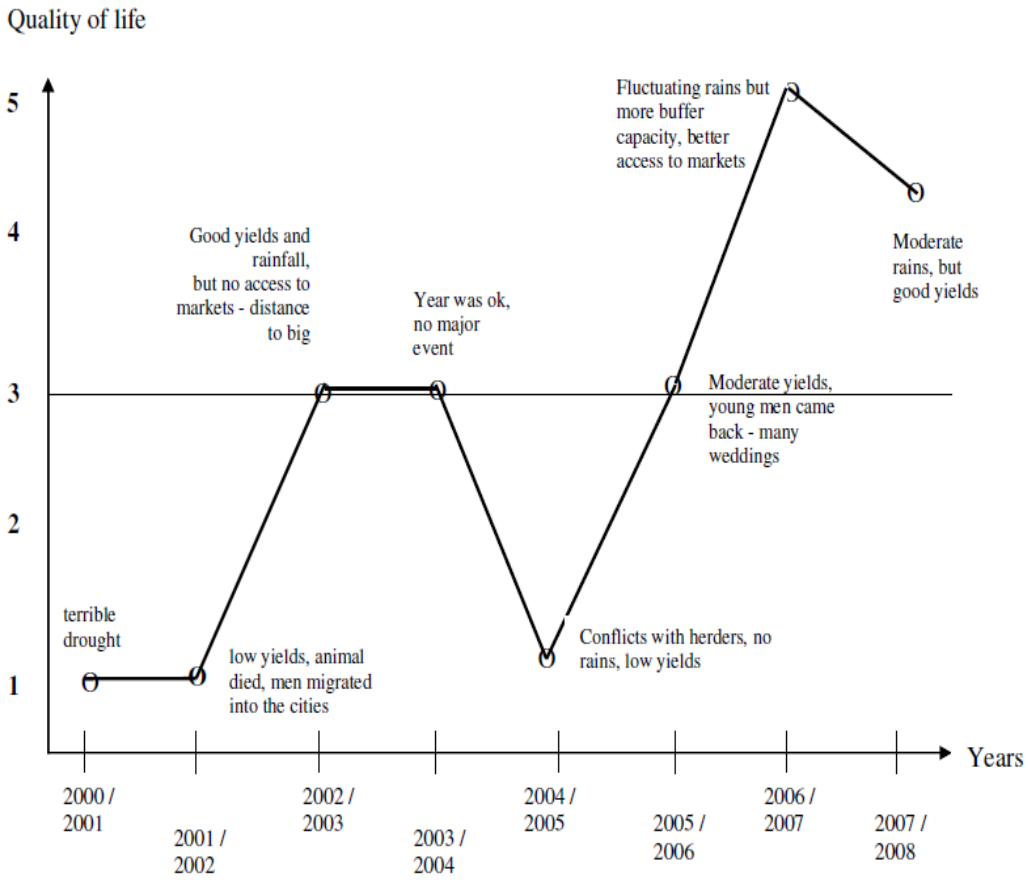
[7] This has been done in a sector wide evaluation of SDC: See MAPP-Examples, file: Fact sheet

[8] This has been done in a sector wide evaluation of SDC: See MAPP-Examples, file: Synthesised tables.

[9] First experiences with the combination of these two approaches will be made in 2010 in the COMPACI programme in Zambia.

Templates and model for MAPP

Figure 1: Quality of life curve for Poro



Legend:
1 = very low quality
2 = low quality
3 = average quality
4 = high quality
5 = very high

Figure 2: Trend analysis									
	Year Programme starts ⇩								
	2000/ 2001	**2001/ 2002**	**2002/ 2003**	**2003/ 2004**	**2004/ 2005**	**2005 2006**	**2006/ 2007**	**2007/ 2008**	**Trend 2001-2008**
Improvement or impoverishment of Living standard									
Agricultural yields	●●	●●	●●●●	●●●	●●●	●●●	●●●●	●●●[1]	+
Family incomes	●●	●●	●●	●●●	●●●●	●●●●	●●●●	●●●●	++
Health of children	●●●●	●●●	●●●●	●●●●	●●●●	●●●	●[2]	●●	--
Access to or exclusion from resources									
…to fire wood	●●●	●●●	●●●	●●●	●●●	●●●●●	●●●●●	●●●●●	++
…to drinking water	●	●	●	●	●	●●●[3]	●●●	●●●	++
…to markets	●	●	●	●	●	●●●●	●●●●	●●●●	++
…to fertile lands	●●●●	●●●	●●●	●	●●	●●●[4]	●●●●●	●●●●●	++
Enlargement or diminishing of knowledge									
School enrolment	●	●	●	●	●	●●●●●	●●●●●	●●●●●	++
Knowledge about land use systems	●●	●●	●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	++
Participation on or exclusion from rights and power									
Peaceful living with herders	●●●	●●●	●●●	●●●	●	●	●	●	--
Avoided migration	●	●●	●	●●●●	●●●●	●●●●	●●●●	●●●●	++

Legend: ●●●●● = very positive, ●●●● = positive, ●●● = average, ●● = negative, ● = very negative

[1] The yields depend mainly on rainfall and in 2008 the rains were very bad. But because of PORO the yield impacts were less pronounced.

[2] Many meningitis cases, many children died.

[3] Through the anti-erosive measures, water could infiltrate much better and the water table rose up again.

[4] Stone walls and biological anti-erosion measures (tree planting, hedges etc) improved soil fertility remarkably.

Figure 3: List of interventions and activities

Intervention/activity	Organisation	Relevance for day-to-day life[1]	Main contributors (men or women)	Main beneficiaries (men or women)	Beneficiaries as part of total population of the community	Own labour contribution (work burden)	Own financial contribution (financial burden)
Health Centre	Government	●●●●●	W	M + F	The whole community	●●●	●●
School	Government	●●●●●	W	M + F	all children	●●●	●●●●
Subsidies for donkey cart	PORO	●●●●●	M[4]	M	all male farmers	●●●	●
Irrigation scheme	PORO	●●●●●	M+W	M	Less than half of male farmers	●●●●●	●●
Nature reserve	PORO	●●●●	M	M	Few male farmers	●	●
Stone walls/ anti erosive measures	PORO	●●●●	M+W	M	More than half of male and female farmers	●●●●●	●●●
Lamb fattening	NGO1	●●	W	W	Less than half of women[3]	●●●●	●●●●
Grain bank	NGO2[2]	●	W+M	M	Few families	●●●●	●●
Tree nursery	Own initiative	●●●	W	M+W	Whole community	●●	●●
Micro credit group	Own initiative	●●●●●	M+W	M+W	Less than half of farmers	●●	●●

Legend

●●●●● = very relevant/very high burden
●●●● = relevant/high burden
●●● = average relevance/average burden
●● = low relevance/ low burden
● = no relevance/no burden

M = Men
W = Women
PORO = Programme evaluated

[1] = Relevance for those who apply the measure.
[2] = One can only join the group, if you put 10 sacks of grain into the bank.
[3] = Demand for lambs is low on the markets.
[4] = Women farmers complain that their husbands refuse to lend them the donkey carts. Program staff members, from whom two joined the discussion group stated, that they didn't know that this might be a problem, since stone transport was considered as a men's job. The program staff didn't think of the multi other uses of these carts (unplanned uses). Men stated that they won't lend the carts to the women, because women couldn't handle them. Women claimed that they would undergo training on that, if men promised to lend them the carts afterwards. Men agreed on that and programme staff noted that they have to discuss the multi use of the carts in a team meeting with programme managers.

Figure 4: Influence matrix

Development Indicators How strong is the influence of intervention x on indicator y?	**Interventions/ activities**												
	Manuring	**Anti-erosive measures**	**Nature reserve**	**irrigation scheme**	**Donkey cart**	**Pumps**	**Lamb fattening**	**Health centre**	**Grain bank**	**Tree nursery**	**Micro-credit group**	**School**	**∑ Passive**
Improvement or impoverishment of Living standard													
Agricultural yields	4	4	1	3	4	2	3	0	3[c]	3	2[d]	0	+ 29
Family incomes	3	3	2[a]	3	4	0	4	0	3	0	1	-1[b]	+ 23 / -1
Health of children	0	0	0	2[e]	4	4	0	4	0	0	2	0	+ 16
Access to or exclusion from resources													
to fire wood	0	0	0	0	4	0	0	0	0	4	0	0	+ 8
to drinking water	0	0	0	0	0	4	0	0	0	0	0	0	+ 4
to markets	1	0	0	0	4	0	0	0	0	0	0	0	+ 5
to fertile lands	4	4	4	2	4	1	2	0	0	4	0	0	+ 25
Expansion or diminishing of knowledge													
School enrolment	0	0	0	1	0	0	0	0	0	0	0	4	+ 5
About land use systems	4	4	4	2	4	1	3	0	3	4	0	0	+ 29
Participation on or exclusion from rights and power													
Peaceful living with herders[f]	0	-4	- 4[g]	0[h]	0	0	0	0	0	- 4	0	0	- 9
Avoided Migration	3	5	- 2	4	5	1	0	2	1	1	1	0	23/ -2
∑ Active	+ 19	+ 20 - 4	+ 11 - 6	+ 17	**+ 33**	+ 13	+ 12	+ 6	+ 10	+16 - 4	+6	+ 4 - 1	**See comments next page**

Continuous Influence matrix

Comments of the beneficiaries on influence matrix

a = The berries on wild brushes are sold with good prices on the market
b = School fees are a big burden on the household budgets
c = The irrigation scheme enables us to pay for health care for children
d = Credit allows us to invest in the productive sector
e = The influence is caused by the vitamins in vegetables, which can be grown under irrigation
f = Conflicts between farmers and herders over land use rules
g = The herders invade into the nature reserve with their animals.
h = Herders stress that irrigation is ok as long as farmers don't use too much of the water from the river.

Legend:
0 = No influence, 1 = slight influence, 2 = medium influence, 3 = strong influence, 4 = very strong influence
'–' means negative influences along the same scale.

Figure 5: Development and impact profile

	Profile -- - +/- + ++	Remarks of beneficiaries	Cross-Checking-Data, Documents/ background interviews	Mainly influenced by which actor/ factor
Improvement or impoverishment of life standard				
Agricultural yields	O O O O O	The yields depend mainly on rainfall. Because of the soil management measures supported by PORO the fluctuations can be buffered better.	No yield statistics about the project region.	External factors (Rainfall)/ PORO
Family incomes	O O O O	The income increases mainly because of the anti-erosion measures and the irrigation scheme.	Project staff agreed that income trends of people are positive.	PORO
Health of children	O O O O	Many meningitis cases, which have cost many lives of children.	Nurses from the health centre confirm the cases and complain that there is no vaccine available.	External factors/Other organisations
Access to or exclusion from to resources				
Fire wood	O O O O	Through the donkey carts we can search in greater areas for fire wood.	Evaluation team: This impact is only positive in the short run. In the longer run it aggravates degradation.	PORO / External factors
Drinking water	O O O O	Through the stone walls water tables went up again, so we can pump water again	Staff from health centre also reported that water related diseases decrease because of that.	Other Organisations
Markets	O O O O	We can use the donkey carts as transport means.	On the local markets more salesmen were seen than before.	PORO
Fertile lands	O O O O	Biological measures near the stone walls (tree planting, hedges etc) improved soil fertility.	Soil analyses from 10 plots confirm higher organic matter.	PORO
Expansion or diminishing of Knowledge				
School enrolment	O O O O	The ratio of enrolled children is 90 percent now.	This reflects also the present national statistics.	Government
Knowledge about land use systems	O O O O	PORO initiated trainings and we could immediately put that knowledge into practise (construct stone walls, and other measures).	Monitoring data from the programme can confirm that directly.	PORO
Participation on or exclusion from rights and power				
Peaceful living with herders	O O O O	Farmers: The rights of herders increased but the rights of farmers decreased because of our new government (farmers said this).	Herders: The farmers didn't consider our pathways by building the stone walls and by declaring the nature reserve etc.	External factors / PORO
Avoided migration	O O O O	Migration into cities decreased as we have new perspectives for our future again, many young men even came back into community.	An additional reason for minimized migration is that migrants are often chased back from the recipient country.	PORO

Interpretation of data

Life curve

In the community, key criteria determining life quality are rainfall, yields and migration. Counting from 2001/ 2002 the life quality improved, with a setback 2004/ 2005. In the view of farmers, this is due to the fact that the programme PORO increased the buffer capacity of the community to withstand fluctuating rainfall. Migrants even came back to the community in 2006/ 2007, because they felt having the chance to feed a family in the future.

Trend analysis

Most development indicators performed "very positive" or "positive" over the reviewed time. Especially the access to resources but also to knowledge improved very strongly.

But two indicators performed very negative, i.e. the health of children and the relationship between farmers and herders:

1. The health situation of children worsened because of a meningitis outbreak and lacking vaccination services from the health centre.
2. The conflicts between farmers and herders increased. The two herders who joined the MAPP-session stated that conflicts already existed prior to PORO, but were exacerbated by the activities supported by PORO. Herders wouldn't respect the land use rules set up by the farmers, because they weren't asked and also not involved in the planning process. When the land use decisions were made, the pathways of herders were not considered. Farmers didn't leave any corridors for them to be able to pass by with their animals without destructing the stone walls.

Cross checking

The transect walk revealed that another problem will probably arise very soon. Though farmers claimed that the access to fire wood became much better, this positive impact is ambiguous, because it is only based on the fact that they could search in larger areas with the donkey carts. Farmers evaluated this change as very positive, but in fact, this will lead to more degradation, if tree planting activities are not increased.

List of interventions and activities

Besides the two governmental activities (health centre and school) and the measures supported by PORO (four different kinds of measures in the area of agriculture and resource management), there are two self-initiatives going on (tree nursery and micro-credit group) and two NGO's active in the community (lamb fattening and grain bank).

All listed activities and interventions are considered as important and very important for the day-to day-life of the community, except lamb fattening and grain bank. Though these two latter activities are considered as less relevant, they demand relatively high labour inputs (low cost-benefit ratio). Concerning the grain bank, only few families benefit because it is difficult to fulfil the conditions for joining the group, and for the lamb fattening the relatively low demand on the markets seems to be the problem. Therefore the sustainability of these activities might be in question.

The PORO-supported activities are considered as very important and have a good cost-benefit ratio and they are also useful for a large part of inhabitants in the community. But the table also reveals that mostly only men benefit from these activities and women, though they sometimes contribute by labour don't benefit in the same way. So it was not surprising, that when discussing the donkey carts, women complained, that they don't

benefit from them. This is because carts belong to men and they wouldn't lend them the carts. After having asked the two staff members of the program who joined the group they confirmed that carts belong to men. This was because the carts were exclusively intended as means of transport for the stones, and this was thought to be a men's job. The program-staff didn't think of the multi other uses of these carts and were surprised, when they saw, that the carts have key influences on many indicators. Men stated that they didn't like to lend the carts to the women, because women couldn't handle them. Women claimed that they would be ready to undergo a special training, if men promised to lend them the carts afterwards. Men agreed and programme staff noted that they have to discuss the multi use of the carts within their team.

The micro-credit initiative seems to work very well in the community and benefits both, women and men.

Influence matrix

It shows the key role of donkey carts impacting on almost all development indicators (highest active sum). This confirms once again, that mobility is a very important development factor. The passive sum shows that most activities impacted positively on soil fertility and knowledge about land use (this is not surprising, because it was the purpose of PORO measures). These effects seem to be so pronounced that migrants came back to the rural areas in the hope of also benefiting from this change.

Development and impact profile

The profile shows an overall positive development with two distinct exceptions: Health of children and peaceful living with herders, as stated above. These two negative developments threaten the success of the entire programme. All together, this means that there is a positive development in the community, supported by PORO, but this development must be considered as vulnerable one. Together with the gender issue and the problem over fire wood, these critical setbacks have to be addressed in the *participatory development planning* (see next page).

Figure 6: Participatory development planning

Setbacks identified	*Vision / resolved problem*	*How to get there*	*Who does the first step*	*Next meeting on this issue*
Increasing health problems in children	Children are not threatened anymore by virus diseases, all children are vaccinated	Reliable availability of vaccines in pharmacies in the community. Subsidies for vaccines are necessary. Vaccination plan for all children in the health centre.	Pharmacist asks neighbour community for advice in where all children are vaccinated.	Parents meet: After one week
Conflicts between farmers and herders over land use rules	Herders accept land use rules	Some herders should participate in land use planning. Their needs should be considered (corridors, pathways etc.). But herders should also contribute e.g. by improving their pastures.	The chief will approach the herders and tries to initiate the meeting on this issue. Some volunteers prepare a proposal for a contract with the herders	Farmers association and herders meet (envisaged): After 4 weeks
Appearing gender conflicts over donkey carts	Women can benefit from donkey carts as men can	Women can buy the subsidised carts directly from the programme. The existing condition that carts have to be used only for transport of stone should be abolished. Women should undergo a short training in how to handle donkey carts. Men promise to borrow their carts to their wives.	A delegation of women approaches the programme staff or management. The change of conditions for subsidies and the training will be proposed (and prepared)	Women delegation and all interested women meet 4 weeks from now on this issue
Increasing scarcity of fire wood	Plenty of fire wood nearby	Capacity of tree nursery must be increased New stoves, with which fire wood can be economised should be bought	Mrs. & Mr. Traore from the tree nursery approach programme PORO managers and NGO's active in this field and ask for support. It is discussed, whether and how Micro-credits for stoves could be issued	Tomorrow Mr. Mrs. Traore report on their findings. Micro-credit group meets tomorrow on this issue.