



Encouraging environmental responsibility in rural Mali:

An example of a truly sustainable development

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I am situated in a classroom in the village of Bougoula, which lies on the outskirts of Bamako, the capital of Mali, in West Africa. We are sitting at the front of the classroom, most of us on chairs, but a couple of people have pulled children's benches up to join us at the teachers table. In the intense midday Sahel heat, we are crowding around three copies of a document that is going to have great significance in the municipality of Bougoula, and potentially be highly influential in the sustainable development of Mali as a whole. Present are the mayor and advisor of the municipality, the local representative of the National Forest Office, representatives from two local NGOs and a development consultant who specialises in soil sciences.

Mali is a landlocked country in the West of Africa. Formerly a French colony, gaining independence in 1960 and having been governed as a democracy since 1992, Mali is a hopeful country. Affected less than its neighbours by the cultural aspects of globalisation, Mali holds true to its valuable ancient traditions. Families form the main social units and little life exists outside of the family. Inequalities in wealth, whilst existing, are largely curtailed because of the system of cousinage, a sort of patronage, in which as a family and community member gains wealth, his (and it usually is his) social responsibility also increases, and he will share his wealth with distant relatives and friends when they are in times of financial need. Ethnic tensions rarely cause problems as people are inextricably linked through this system. However, Mali has drawn attention to itself by being categorised as one of the world leaders in infant mortality rate and maternal mortality rate.

To add to its difficulties, Mali lies in the environmentally fragile Sahel region. Its arid and semi-arid climate, together with a

rapidly increasing population that looks more and more towards a cash rather than a subsistence economy puts massive pressure on the existing resources. Deforestation, extreme soil erosion and eventual desertification are processes occurring over the whole country and especially in the region surrounding the capital, Bamako. As the so-called developed world is acknowledging the importance of global environmental resources, foreign funding is becoming available to help the Government try to curtail some of these problems. How then does a country like Mali, with a predominantly rural, illiterate population, the majority of which has no access to radio or television begin to educate its people on the vital importance of preserving the environmental resources of today, in the interest of the health and wealth of its people tomorrow?



A truck loaded with wood on its way to Bamako

Strangely enough, this prospect may not be as difficult as it initially seems. In a country like Mali, people and nature exist within close quarters. People are closely linked to their environments through farming, the collection of firewood and the sharing of scarce water resources and so changes to the environment do not go unnoticed, and the oral tradition of Mali allows knowledge of environmental change to be shared. The



adoption of more responsible attitudes towards local environments might be easier to initiate than in richer countries, perhaps, where whilst environmental education is widespread, the consequences of disrespecting environmental limits are so far detached from daily lives that they do not form a part of public consciousness, and rather scientists and industry argue about whether climate change does really exist or whether the ozone layer is actually being depleted. In richer countries people seem largely to be waiting to feel the effects before acting, whereas as in the South, the effects of environmental pressure are felt pretty much immediately, as people are forced to walk twice as far to collect firewood, or find that they can no longer farm on previously fertile soils.

The Bougoula Municipality

The people of the Bougoula Municipality, 70 km southeast of the Malian capital of Bamako, are very lucky. Their Municipality (district) has been chosen as one of 6 of the 701 newly established district units that will benefit from an internationally supported (by GTZ) Government initiated Environmental Action Plan. Mali-Folkecenter, the Southern branch of the Danish Folkecenter, an NGO working with renewable energy, is helping the Government to implement the plan in three of the six municipalities. I have been speaking to Aliou Maiga, the social-economist who works for the Mali-Folkecenter who has been involved in devising the strategy, the first aspect of which has been to ascertain the environmental pressures specific to each municipality.

Mali-Folkecenter has trained two people from each village in each municipality (the municipalities contained 11-26 villages) in a very basic form of land surveying so that the present environmental conditions can be mapped and a plan can be made to curtail future environmental degradation. The two trained villagers then constructed maps of the organisations and institutions working within each village, maps showing land use and maps of community resources held by villages, such as health centres, schools, mills, mosques, football pitches. Village products and imports were noted and a

calendar constructed of village activities as they changed over the seasons (the rainy season is when the villagers are most active in the fields). The newly trained individuals then formed teams with about 8 other villagers who were chosen at a village meeting, for their intimate knowledge of the land and included elders, hunters and pastoralists. The teams walked north-south and east-west transects of the village, noting down everything that they saw in terms of relief, soil type, water supply, vegetation and animal life that was seen to be present and that was known to have been present in the recent past, but which has since disappeared. Thus most of the information gathering has relied on the strong collective memory of each village.

With Aliou's help these characteristics were then mapped, to give the municipalities each their own first land survey of the existing situation and of how that situation had changed in the lifetime of the villagers. Meetings were held with local and national Government representatives, with Mali-Folkecenter technicians and with all the newly trained villagers from that municipality, firstly for analysis of the findings and then in order to draw up an environmental plan for the Municipality. It was at this stage, that the needs of environmental clean-ups and the possibility of road improvement were also discussed. The training of villagers in mapping environmental degradation provides villages with a lasting human resource which will continue beyond the finishing date of the projects.

A combined effort

The stage in which I joined the proceedings was for the proof reading of the environmental action plan. As the representative from the national Forest Office, Brahmia Makalou, read out the plan, corrections were made to detail, and concepts were explained to the Municipality representatives. The plan encompassed plans for the socio-economic development of the municipality (better roads, irrigation and drainage, expanding the processing of products within the village) as well as plans to limit and reverse environmental damage with forest management, erosion prevention measures (hedge planting,



forbidding of slope cultivation), and with the development of renewable energy in the villages.

The main points for discussion at the meeting I attended were the management of the woods and the protection of species. 'The forest is for the people' says Brahmia, 'You can cut it, but you have to plant as well. You must work out how much wood your village needs. The men must ask the women how much wood they use in a day, in a month, in a year and you must calculate how much wood you need. People must be told that they can cut what they need, but that they must leave the rest' (in many municipalities, problems occur because people cut local trees to sell firewood in Bamako). 'Every cultivation has its limit', says Brahmia, 'you cannot just keep going'.



Charcoal production in the damaged landscape of Bougoula

Similarly, in the case of endangered species, 'Every country in the world has its endangered species, and every country in the world protects its endangered species. You, in Bougoula, also have endangered species and you must start to protect them. Its like with the elephants', says Brahmia, 'there used to be a lot of elephants in Mali. These days you do not find elephants in Bougoula, and unless you take measures, the same will happen with the plants and animals that you have now'.

As mentioned above, as well as the environmental protection aspects to the plan, there are also development aspects to the action plan. It is these that the Mayor shows most interest in; these are, of course, the aspects that will most excite his people. But in a country like Mali, where people are so dependant on their local

environment for their daily survival many of the measures that will protect the environment will also increase revenues. Reduction of soil erosion will mean improved soils and so the possibility of higher yields. Better forest management could mean that eventually the village would have enough wood to be able to sell a surplus in Bamako. This is not to say that the task of changing peoples attitudes and daily habits is going to be easy, and I understand why at times the mayor looks perplexed at thought of the work that is ahead.

The plan also talks about improvements to roads that will massively improve the municipalities ability to participate in the cash economy, but national government encourages local government to take responsibility for its existing roads as well. 'If heavy vehicles that come to your municipality (transporting extracted sand and gravel) damage your roads, then you must tax these vehicles and use the revenue to improve the roads. Ban heavy vehicles from driving on roads that are not surfaced with tarmac in the wet season, because that destroys your only means of travel.' And the evidence of this was clear on our journey, where deep trenches occurred within the dry mud track, where heavy vehicles had, without consideration, driven and caused a lot of damage. This process of national government encouraging local autonomy and local responsibility, I found to be truly inspiring.

Implementation – people participation

Once the action plan has been finalised and signed by the mayor of the municipality, there remains the small matter of implementation of the plan. This process is certainly going to involve a lot of hard work for many parties. The plan outlines activities that must be carried out over the next 6 years. The first step in the process is the pledging of funding or contribution of resources in the region of 1.5 million dollars per municipality. Most of this will be provided by the municipality itself, in the form of labour, building materials and young trees, but around 25% must be found externally from Government, national and international NGOs and from international development agencies. I ask Aliou whether



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it will be difficult to secure such funding, but he seems confident that the sum will not be seen as inappropriate because of the knock-on effects of improving these 6 municipalities, 'it is hoped that this will be just the beginning and that once the success of such a programme is proven, many other municipalities will follow suit'. The majority of the work, as mentioned above, will actually be done by the populations of individual municipalities. NGOs, that specialise in, for example, irrigation systems and slowing soil erosion will oversee and advise, but all the labour will be supplied by the population and much of the organisation will be carried out by existing well-organised Village Associations.

Mali-Folkecenter's ongoing work

Mali-Folkecenter will continue its involvement as far as facilitating discussions concerning implementation, but will then withdraw from the process and be involved in a specialist capacity, in carrying out projects involving renewable energy.



Mali-Folkecenter biogas installation

Mali-Folkecenter has, in fact, already started working in the municipality of

Bougoula, providing biogas installations which use animal waste to create fuel for cooking. Such domestic installations, it is hoped will start to combat the problem of pressure on forest resources in the surrounding area.

If families start cooking using animal waste as a provider of fuel, the forest of the municipality will have more time for recovery; individual trees will grow to a greater age before being felled and soil erosion will be prevented due to the stabilisation provided by these trees. Large trees also provide a source of valuable construction wood to the village population.

Mali-Folkecenter – other areas of expertise

Mali-Folkecenter is also involved in research and implementation of solar, plant-oil and in the near future wind power in Mali. Mali-Folkecenter is committed to using Renewable Energy Technologies for the sustainable development of rural areas in West Africa. Mali-Folkecenter also works closely with Malian Renewable Energy Technology distribution companies to encourage their development and works closely with Government to ensure that the Government priorities of water supply, education and healthcare are of primary concern.

As we leave the village of Bougoula, seven of us packed into the Mali-Folkecenter pick up truck, the mayor and his advisor thank the Folkecenter representatives for their important work. The future looks hopeful, therefore for these six municipalities and for the others that will benefit from the lessons learnt in them. With help and dedication from all quarters, a truly sustainable form of development, it seems can indeed be achieved.