

### **3-6 Socio-economic study**

As a part of the field survey, a socio-economic study was also carried out at Tangapore and Nare.

A summary of the results of the study is as follows:

#### **Tangapore**

- Population: 2,079, all Mossi people
- Public services: One primary school (built in 1995), no dispensary
- Main activities for living: Agriculture, with livestock farming as secondary. Commerce is also active in the market (Korsimoro).
- Common diseases: Meningitis, eye diseases, headaches, tumors, diarrhea, etc.
- Annual average rainfall: About 660 mm until 1995

The village is located in the transition zone between low mountains and peneplain. Not only the peneplain but also the gentle mountain slope are cultivated, and the arable land is exploited almost to the limit. Due to the use of fertilizers in some parts, the food self-sufficiency rate is estimated to be more than 90%. However, considering the situation that no more arable land remains and the land has continued to degrade, the village is likely to suffer serious food shortage with the increase in population in the near future. It is thus primarily important to increase the productivity of the land, and to exploit new water resources for it.

Livestock farming is the secondary activity for living in this village, and has a role of "savings" to prepare for emergency situations such as drought. However, a shortage of pasture and a lack of water for animals in the dry season are problems for this activity.

There were 3 hand pumps, 6 dug wells, 1 small-scale surface dam and 6 reservoirs in the village, but it was estimated that only about 70% of the water demand (about 20 liters per person) for domestic use was supplied. The water in the small-scale surface dam and reservoirs used by livestock animals was also used by the villagers for domestic use, and this situation led to diseases caused by polluted water. Therefore, to improve water quality for domestic use, the exploitation of new water resources was necessary.

Some young villagers in Tangapore had formed a group to undertake the modernization of agriculture, and they were trying to produce compost and to grow some vegetables. Tree-planting education was also promoted in the primary school. Although the lack of water constrained these activities, the will, experience and recognition of the villagers will facilitate their participation in this project that will aim mainly at the effective use of groundwater resources.

#### **Nare**

- Population: 2,896, mostly Mossi people with some Fulani people
- Public services: One primary school (built in 1996), no dispensary
- Main activities for living: Agriculture, with livestock farming as secondary (It is the principal activity for Fulani people.)
- Common diseases: Guinea worm infections, eye diseases, dysentery, meningitis, etc.
- Annual average rainfall: About 590 mm until 1995

The village is on a peneplain with some small monadnocks, and the Kolongo River, a tributary of the Gouaya River that is a part of the Niger River basin, runs through the village. The Kolongo River is a *wadi*, a seasonal river that has running water only in the rainy season.

The peneplain and the lowland along the Kolongo River (part of which is flood plain) are exploited as farmland. However, the farmland is only 12% of the territory, and arable land remains. Forest covers only 2% of the territory. Most of the bare land, which occupies about 20% of the territory, was cultivated before. It probably means land degradation has continued due to the cutting and the cultivation of forest and bush.

The farmland is in general barren. Not using either fertilizer or compost, the food self-sufficiency rate in Nare Village is only about (or less than) 60%, which makes the village one of the poorest in Burkina Faso. Many livestock animals, especially cattle, can be seen, but most of them belong to the Fulani people. Few Mossi people keep livestock animals in sufficient number as "savings" for emergencies like drought.

Nare Village, including Kombangbedo Village, did not have sufficient modern water-supply facilities. It had only 1 hand pump and 5 dug wells with concrete rims. Water supply by these facilities was estimated to be less than 60% of the demand. Most of the villagers obtained water for domestic use in the rainy season from the river, and in the dry season, from the dug wells excavated in the flood plain. This led to a high incidence of disease such as Guinea worm infestation caused by polluted water. Many villagers wanted to grow some vegetables to prepare for food shortages and also to obtain a cash income. However, under conditions that did not even allow sufficient water for domestic use, there was only one family who were actually growing vegetables.

Under these circumstances, the villagers of Nare had a strong desire to exploit new water resources. However, they did not have the information required to improve their living conditions or for rural development, and their participation in the model project was expected to be difficult.

The results of the above-mentioned socio-economic study suggest that Tangapore Village was more ready for the project.

However, as described in Section 3-4, it is Nare that has the hydrogeological structure appropriate for a subsurface dam. Finally, it was decided that the model project would be carried out at Nare because the feasibility of construction of the subsurface dam was the first priority.