



Dam maintenance

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THE OPERATION AND Maintenance of a Water Supply Facility is a component which is always emphasised to forestall its sustainability. In Village Water Reservoirs, Project where earth dams are constructed, the management realised that the dams will need maintenance as soon as they have been constructed.

Earth dams are constructed in the dry season - November to May awaiting the wet season to be filled up. It was realised that with the rains, erosion of the dam wall occurs forming gullies. A continuous erosion could lead to a major crack on the dam wall and a subsequent collapse.

Preventive maintenance activities

To forestall the collapse of a dam, the animation section of the project mobilises dam communities in the wet season to transplant vertiva grass on the dam wall.

Vertiva grass grows wild in swamps. It matures in August, the middle of the rainy season. It has broad-based roots which keep the dam wall firm. The grass is transplanted in such a way that erosion gullies cannot be formed easily. It is drought resistant; dries up in the dry season but quickly sprouts as soon as it rains. It is spread by the wind.

The transplanting of vertiva grass is the same as those of guinea-corn and millet, cereals which are widely cultivated in the Northern Region, Ghana; the top of the grass is cut before it is transplanted. The communities therefore easily pick this up and all the animators do is to encourage and monitor this activity.

Mending of erosion gullies

Since the transplanting of vertiva grass starts in the middle of the wet season, it is likely that erosion gullies would form. While the grass is being transplanted these erosion gullies are also mended by the communities with the help of the animators. The mending of erosion gullies is also likened to women's activity in the plastering the floors of rooms in the areas, thus making it easy for the women to participate in the maintenance of the dam.

The transplanting of vertiva grass and mending of erosion gullies are therefore activities that all members of the community are involved in.

Long term maintenance policy

Two years after a dam has been constructed the Project officially hands it over to the dam community to manage and maintain. However, the Project instituted a long-term maintenance policy with three phases to help participating communities to sustain their facility.

Phase I

In the first phase of the policy, the community has to pay a fee to the project for the Project Maintenance Team (PMT) constituting members of the technical and animation sections (3 members to visit the dam). This is termed Routine Maintenance visit. It is a biannual activity; before and after the rain. The PMT visits the dam with a checklist. At the village level, the village maintenance team (VMT) is involved with these routine checks. The dam is assessed by both the PMTs and VMTs after which the community as a whole is briefed on the state of their dam. The PMTs with the community determine the problems that can be solved by them and those which need Project help. At the Project level a report is written and given to the community.

If a dam community does not participate in Phase I, it cannot seek help from the project.

Phase II

After the routine visits, the community with technical dam problems will have to call on the Project for help to repair the fault. This leads to the phase II of the Maintenance Policy. The community has to hire the services of the PMT and pays for transport, workmanship, night allowances of the visiting team and materials for the repairs. These costs are not subsidized.

So far only two communities have gone through this phase and it is interesting to note that one community could not pay their bill because it was too high.

Phase III

Phase III of the policy foresees a situation of dam failure which may need the use of heavy machinery. With regard to this phase the Project advises are communities to open an account towards eventualities.

The communities reaction to the policy

In the first year of instituting this policy all the six (6) communities with dams participated in the Programme. However, in the subsequent years, one community could not mobilise funds to pay their bill and so dropped out.

As already mentioned, two communities needed technical help from the Project. However, one could not pay their bill.

Two communities out of sixteen (16) deposited money with the project as savings for the future maintenance of their dams. The animation team has tried to "sell" the idea of harvesting the fish from the dams and selling them for

the future maintenance of their dams, and this has been well received. However, the proceeds from the sale of fish are used to pay for the Phase I. The team also tried to encourage the communities to make dry season vegetable gardens. The vegetables can be sold and the proceeds saved for maintenance but they are not motivated well enough. Another way of getting money was to ask neighbouring communities who come to fetch the water in the dry season to pay some money but the communities say they cannot sell water to their neighbours.

The problem still remains to get the communities to save money for the future maintenance of their dam.

Comments on the maintenance programme

The long-term maintenance policy was instituted by the Project and put in the care of the animation section (the software). The technical section felt that it was their responsibility and not that of the animation section. This was agreed on by the animation section but the Project Manager felt it should be headed by the animation section

because it is the section which shows interest in the activity. There was therefore no co-ordination between the Technical section which has the technical knowledge and the animation section which can mobilise the community but can not solve technical problems.

The biannual visits were said to be unnecessary by the Project maintenance team but the communities still had to pay the same amount for the yearly visit. To pay this one visit, the animation section has to plead with the technical section.

At the Project level, the maintenance policy is unworkable, because of the attitude of the technical section. There is also the problem of the animation section's inability to get the communities to save money towards the future maintenance of the facilities.

Conclusion

The Village Water Reservoirs Maintenance policy is in the right direction but it is going through its teething problems which may be solved with time.