

0631. Peter Laban's Evaluation Report (17 Mar 1994)

Peter Laban of IAC comments that there is more of a communication problem between ADATS and Icco, than any fundamental dilemma that cannot be solved. He recommends that Icco approves ADATS proposal for the extension of the DLDP into 4 taluks.

1. BACKGROUND

Background of the programme; implementation of DLDP/first phase in Bagepalli Taluk; proposals for extension of DLDP in other Taluks.

Controversy between ADATS and ICCO on sustainability and viability of Soil and Water Conservation Works on the one hand and on a watershed approach on the other.

(to be elaborated in final report)

2. MAIN OBSERVATIONS

2.1. Land use and distribution of land holdings

Some general observations on geology and topography will be made later.

The landscape in the areas visited can be described by 2 Land Systems:

An intricate pattern of small valleys/watersheds surrounded by irregularly shaped hills with rather steep and very stony slopes; crest lands are dominated by rocks and big boulders.

Larger watersheds where the topography is more gentle with large tracts of sloping lands with mainly shallow soils.

On the basis of observations during this short field visit Land System A seems to be dominant.

In these Land Systems generally 4 Land Types may be distinguished:

valley bottom lands around tanks: these lands are all irrigated and have at least 2 crops a year; gently sloping lower slopes with relatively deep soils and dry land agriculture. This Land Type does not seem to be very common in Land System B

steeper higher slopes on shallow and stony soils and isolated outcrops of rocks and boulders; these lands are basically wastelands where only a very extensive and marginal dry land agriculture can be practised (broadcasting of seeds)

very rocky crest lands with big boulders: grazing lands, waste lands

In areas with a somewhat more gentle topography

Distribution of land holdings among small/marginal and larger farm households is highly determined by the physical land conditions of the above described Land Types. All larger farms (> 20 acre) are found in the valley bottoms around the tanks (Land Type a), medium farms (10 to 20 acres) are found at the dry gently sloping lands with relatively deep soils adjacent to the valley bottoms (Land Type b), while the marginal/small land holdings are almost in all cases found at the higher, irregular and steeper slopes on shallow and very stony soils (Land Type c).

Members of the CSUs are thus found mainly on the higher slopes of the watershed (in the upper catchments). Indeed very little land in Land Type a or b belongs to the marginal or small farm households that form the Coolie Sanghas. For this reason it can be concluded that there is little risk that the proposed DLDP will be turn out to be non-viable due to scatteredness of the Coolie landholdings. However there are not infrequent cases that land belonging to the same category of landowners, but non-members of the CSU, is found amidst the land

of CSU members. This may create indeed problems with regard to continuity of contour bunds. In most cases ADATS makes it a point to work in preference on areas where member landholdings are contiguous.

2.2. Implementation of Soil and Water Conservation Measures

The way Soil and Water Conservation Measures (SWCM) are carried out in Bagepalli Taluk needs important improvements. Although this will be difficult to realise in Bagepalli Taluk itself, lessons learned from DLDP implementation in this Taluk should be applied in the extension areas.

Proper site selection and construction of check dams;

diversion ditches are constructed in several places; some more care has to be taken not to construct them under too steep slope gradients; also more care has to be taken to have them under good grass cover (grassed water ways)

proper positioning of contour bunds along the contours (in many cases bunds are too straight and do not follow the natural curved lines of topography, in other cases bunds are constructed on land holding boundaries;

on many field plowing is done along the contours. However, every third year farmers plow also along the slope; they seem to have a good, but for us technicians not very well-understood, reason for this practice. It is important to discuss this further with the farmers as plowing along the slopes contributes highly to a too rapid filling up of the contour bunds (see also observations on the salinity/alkalinity problem); distance between contour bunds seems in most cases to be appropriate; there is probably rather a tendency to construct bunds at too short a distance; this increases of course the cost of investment.

Proper positioning of contour bunds may imply re-arrangement of individual landholdings (land consolidation).

A number of possible additional measures have been discussed with the Technical/Agricultural Staff of ADATS, they will be mentioned here shortly and somewhat more elaborated in the final report:

re-enforcement/protection of grass cover along contour bunds; necessity or not of tree planting along contour bunds; sowing/coppicing of perennial varieties of pigeon pea (*Cajanus cajan*) along contour bunds;

tree planting could be intensified; creative use can be made of all kinds of small forlorn patches of land: in Land Type d; in gullied areas; around check dams; just below small (artificial) tanks in the upper catchment; along diversion ditches, etc. (in some case where water is close to the surface, e.g. in gullies or grass water ways small living check dams could be made with e.g. seema jali (*Prosopis juliflora*))

2.3. Further land regeneration measures needed

Most Coolie landholdings are found on land that has undergone often severe land degradation (see Fig. 1, phase c).

The important stabilisation measures (see Fig. 2, phase d) of the first phase of DLDP have to be followed-up by restoration measures in a second DLDP phase to assure sustainability of the whole programme. This capitalisation on the initial investments is crucial to make the programme a success.

Some suggestions are given below; they have to be worked out by ADATS itself using existing indigenous and 'new' knowledge and expertise available in Karnataka or India (Bangalore University, SEARCH, AME, ISI, etc.):

in view of the degraded land conditions and the poor inherent soil fertility level, it will probably be rather difficult not to use additionally chemical fertilisers. It is important to study more appropriate use of such fertilisers, well adapted to the specific site conditions; improved cropping practices: mixed cropping practices, appropriate crop rotations, etc.; adoption of more organic farming practices: improved use of farm-yard manure, improved composting; use of organic matter from tank lands (?).

The field visits revealed on certain places the existence of salinity and perhaps alkalinity problems in specific positions in the landscape, mostly close to natural waterways. ADATS should take up this point as a serious concern and conduct further study on it, in the first place to have more insights in its importance and secondly to undertake viable measures. There is a certain risk that the intensified land use brought about by the DLDP might increase occurrence of these problems. There is a possibility that the farmer's practice of plowing along the slope has something to do with this problem.

Strong tools to enhance such regeneration measures are Participatory Technology (PTD) methodologies, where on field trial-and-error is carried out by the farmers themselves with assistance by ADATS field workers and agricultural staff.

Apart from the above measures it will be important to acknowledge the need of maintenance of the SWCM carried out in the first phase DLDP. Cost of such maintenance should by preference be carried by the CSUs themselves; fund reservations for this purpose need perhaps to be taken into account. In some cases external funding might perhaps be required.

2.4. Watershed approach and effects of watershed management

The too political and technocratic connotations that are often linked to the concept of watershed management have contributed to the above mentioned controversy (see para.1) between ICCO and ADATS on this issue. After the discussions in the field it became clear that ADATS does basically apply a watershed approach but restricted to the upper catchments where most of the Coolie lands are found. There seems therefore, to be not any reason for this assumed controversy.

Nevertheless there are certainly important and mainly positive effects to be noted from the measure taken in the upper catchments on the better lands in the valley bottoms: the most important one is the recharge of groundwater and thus the higher availability of water down slope.

It will be an interesting challenge to the CSUs and ADATS to use the highly strengthened claim making capacities of the CSUs to negotiate compensatory measures with the richer farm households in Land Type a. It may be for instance observed that sustainability of the DLDP will only be possible when soil fertility of the lands in the upper catchments is increased or at least maintained. This will certainly require increased organic matter inputs; the richer farmlands in the valley bottoms could eventually contribute to such inputs.

To come to a better understanding of land use and its mutual effects, participatory elaboration of land use maps for at least the upper catchments of watershed belonging to CSUs is an interesting tool. It will also contribute to the internal discussions within the CSUs on all kind of land investment and management decisions to be taken on the lands belonging to the CSUs.

3. CONCLUSIONS AND RECOMMENDATIONS

Apart from the more detailed suggestions and observations made in para. 2 the following main conclusions and recommendations can be made:

- 3.1 The initial concern of ICCO of too scattered land holdings of Coolie farm households, making investments in Soil and Water Conservation Measures rather nonviable, does

not find a basis in the specific ecological and socio-economic context of the area in which ADATS is working. On the basis of the field observations it may be concluded that in most cases Coolie land holdings are found together in the upper catchments of the watersheds.

- 3.2 Important technical improvements have to be made in the implementation of the DLDP.
- 3.3 Much attention should be given to additional measures to enhance further restoration of the lands (see para. 2.3); a special focus needs to be given to maintain or increase soil fertility levels; study of more organic farming practices is recommended. These kind of activities need to be implemented already now in Bagepalli Taluk, where the first phase of the DLDP has already been carried out.
- 3.4 The recruitment of well trained agricultural staff by ADATS may be considered as a very wise decision. They have an important task in guiding the technical implementation of the SWCM (DLDP first phase) including the participatory elaboration of land use/management maps. They will also have an important task in giving guidance to the restoration measures needed in the second phase DLDP. Regular external advice may be needed to back up the technical knowledge and experience of this young team of agricultural specialists. A certain increase of such technical staff may be needed.
- 3.5 Mechanism could be developed by CSUs and with support from ADATS to negotiate mutual positive watershed management effects with the richer down-slope farm households.
- 3.6 The delay in approval of the DLDP in the extension areas has contributed to the motivation and determination of the CSUs in carrying out such a programme.
- 3.7 ICCO is recommended to approve ADATS proposal for extension of the DLDP in the Taluks of Chintamani, Siddalaghatta and Chickballapur. In view of the seasonal calendar SWCM have to be carried out in the coming months and approval will be welcomed with not too much delay.

Bagepalli,
March 17, 1994

ANNEX. PROGRAMME FIELD VISITSMonday, March 14, 1994

1. Travel from Anantapur to Bagepalli
2. Field visit to Bagepalli Taluk: G. Maddepalli Cluster (Jiginivanlapalli, Mittevanlapalli and Sakavanlapalli villages)
3. Situation Meeting with Staff ADATS

Tuesday, March 15, 1994

1. Field visit to Bagepalli Taluk: Nagarlu and Kamatampalli villages
2. Field visit to Chickballapur Taluk: Valasahalli Cluster (Ammagarahalli, Busetihalli and Valasahalli villages)
3. Visit to ADATS Chickballapur Campus

Wednesday, March 16, 1994

1. Field Visit to Chintamani Taluk: Papathimmanahalli Cluster
2. Technical discussions with Agricultural and Supervisory Staff

Thursday, March 17, 1994

1. Report writing
2. Travel to Bangalore
3. Final discussions