

The SSE Program

Review of the Sinkat Project

Implemented by Norwegian Red Cross / Sudanese Red Crescent

by

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CENTER FOR INTERNATIONAL ENVIRONMENT AND
DEVELOPMENT STUDIES
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EXECUTIVE SUMMARY

Sinkat Integrated Rural Development Programme (The Sinkat project) is being implemented by Norwegian Red Cross (NRC) and Sudanese Red Crescent (SRC). The project is targeted towards supporting Beja nomads. The present report presents a review of the recent development of the project, with special emphasis on the project's contribution to fulfilling the overall objectives of the SSE program, project economy, and the project's follow up on evaluations made in 1989 and 1993.

The population of Sinkat practice mainly camel and goat pastoralism. Livelihood is threatened by harsh natural conditions, particularly because of very low annual rainfall. The Sinkat project was established in 1985 with the objective "to establish the means of subsistence for up to 250,000 Beja-nomads following a prolonged period of drought. Furthermore, prepare both the population and the environment for coping with climate changes in the future." With this broad objective the project management has carried out project activities, mainly related to water resources management, agricultural development, and institutional development.

The review team assumes that the project has had a positive influence on the environment and food security. However, these assumptions cannot be verified because of lack of indicators and data monitoring.

The project economy indicates that activities can be continued at today's relatively modest level of support. Local government and others have recently started co-funding some specified activities, which is considered by the review team to be an encouraging development. It is not likely, however, that the project will be able to manage without funding from abroad within any foreseeable future.

The project was evaluated in 1989 and 1993. The review team found that several recommendations from these evaluations are still valid, but have not been followed up. The most important shortcoming seems to be lack of monitoring.

This review team finds that the project staff appears as an effective and dynamic team, capable of implementing a higher level of project activities than what is possible with the present funding.

The review re-emphasises some of the recommendations from earlier evaluations. Some suggestions are also made that may improve the technical design of project activities. It is recommended that efforts to merge Red Cross / Red Crescent activities in the Sinkat district should be continued. A monitoring programme is suggested, focusing on climate and runoff, project costs and indicators of effectiveness in achieving the project objectives. It is further recommended that the project should be transferred from the SSE program to regular NGO (Priv. org.) support from 1997.

1 INTRODUCTION

The Sinkat project has been set up by Norwegian Red Cross and Sudanese Red Crescent to support Beja nomads, mainly of the Hadandawa tribe. The project concept is integrated rural development and the activities include water harvesting, erosion control, afforestation, well rehabilitation, latrines, women groups, support to primary schools and adult education.

A team was set up by NORAGRIC in November 1995 to review the project. The team consisted of Fred H. Johnsen (NORAGRIC), Åge Rønningen (RBConsult) and Johannes Deelstra (Center for Soil and Environmental Research, JORDFORSK).

According to its terms of reference, the team shall assess the development of the Sinkat project over the past two years. The extent to which the project follows the intention of the SSE program is particularly in focus. The team shall also assess the financial viability of the project when the SSE support is phased out and address the scope for income generating activities within the project.

The team's key contacts in Sudan while reviewing the project were:

Mohammed Bedawi (project director, Sinkat project)

Mohamed Osman (acting general secretary of Sudanese Red Crescent)

Ahmed Eltayeb (desk officer of the Danish project in Sinkat).

The following documents were important sources for this review:

- Henning C. Svads, Sally Sutton, Abdel Ghaffar M. Ahmed, Ingrid L. P. Nyborg: Evaluation of the Norwegian Red Cross - Sudan Red Crescent Society's Integrated Rural Development Project (IRDP) in Sinkat District Red Sea Hills, Sudan. NORAGRIC report, June 1989.
- Fred H. Johnsen, Espen Sjaastad. Travel report, SSE project visits 10-25 September 1993. Integrated Rural Development Programme, Sinkat, Sudan.
- Åge Rønningen, Idris Salim, Amin Omer: Sinkat Province, Red Sea Hills, Sudan. Integrated Rural Development Programme. Evaluation Report. Scanteam International; October 1993.

The review team would like to thank all Red Cross / Red Crescent's personnel for co-operating with us and making a considerable effort to supply us with data as well as catering for us during our field trip.

2. PROJECT BACKGROUND, OBJECTIVE AND HISTORY

2.1 Background

The Sinkat Province is part of the Red Sea Area, and has a population of about 70,000 people, out of which about 15,000 live in towns (Sinkat and Gebeit). Sinkat has a dry, hot desert climate with very low precipitation (0-150 mm per year) and variable in time. The population of Sinkat are mainly Hadandawa, who constitute the largest group within the Beja group of tribes in Eastern Sudan. Most of the rural Hadandawa practice camel and goat pastoralism. Cultivation is generally for own consumption, and is limited by the low and unpredictable rainfall.

The future situation in the area will depend on the natural harsh conditions and the development efforts that will be implemented to counteract adverse conditions and enhance adaptability of the population. At the pessimistic end, the conditions have been described as steadily declining and variable rainfall levels over the last 20 years. If this trend continues, significant out-migration from the area may be the consequence.

The Norcross/SRC Sinkat Development Project (the Joint Project, Sinkat) was initiated in 1986 as a "joint disaster prevention and development project", planned to consist of water resources management, agricultural development and institutional development.

2.2 Project objective

According to the first application for funding, the objective of the project was "to establish the means of subsistence for up to 250,000 Beja-nomads following a prolonged period of drought. Furthermore, prepare both the population and the environment for coping with climate changes in the future."

2.3 Project history 1986 - 1994

The project was launched in 1986 with three main components: water resources management, agricultural improvement and institutional development. During the early stage of the project (1986-1988), a number of various structures such as dams, wells, and hafirs were constructed for water harvesting and water storage including the Hashtribab diversion dam and the Beramfi diversion dam (both constructed 1988). The agricultural component focused improved techniques for growing sorghum (durra) and to some extent afforestation. Institutional development mainly focused the internal development of Sinkat branch of the Sudanese Red Crescent.

The Project was evaluated in 1989 resulting in a number of recommendations. Some of the recommendations are still valid, and still need to be followed up:

- Norcross, Sinkat should have special staff responsible for collecting socio-economic data, information on the population's reaction to project activities, and data on the output and impact of these activities.
- Local staff should receive training in areas such as project management, monitoring and evaluation.
- A survey of the carrying capacity of the grazing areas should be carried out.

The 1989 evaluation also recommended to "slow down on new construction and to set up good monitoring systems to assess the performance of what has already been constructed." This recommendation has been followed to the extent that no new large-scale investments like the Hashtribab and Beramfi dams have been made after that time, but the Hashtribab dam was improved in 1993. Instead, the project has diversified into a number of new activities like adult education, women groups, pottery, small scale gardening, support of activities in primary schools, and others.

In 1993 the project was evaluated by a team set up by the Norwegian Red Cross and also visited by NORAGRIC. The conclusions from the 1993 evaluation are referred to in some detail in chapter 5.

In recent years the budget allocations for this project have been relatively modest. A large share of the budget is spent on maintaining the project organisation. An interesting new development is the tendency towards local government co-funding specific activities.

2.4 Project progress in 1995

Project activities in 1995 includes construction of water hafirs, rehabilitation of wells, erosion control, production of seedlings, tree planting, education, poultry, women centres, adult education, installation of VIP latrines, youth camps and institutional re-organisation. The activities are mostly being implemented as scheduled. The review team finds that the project organisation has an impressive ability of implementing many activities with relatively modest financial resources.

3 THE PROJECT'S CONTRIBUTION TO FULFILLING SSE OBJECTIVES

3.1 Environmental rehabilitation

The team assumes that several project activities have a positive impact on the environment. Within some very small spots, the results were very visible, e.g. fruit gardens and some tree plantings. Because of lack of monitoring, however, it is not possible to assess the overall results of the program in terms of environmental rehabilitation. Those spots where the results are clearly visible constitute much less than one per thousand of the total project area. To be able to assess the overall impact, indicators of land rehabilitation need to be developed and monitored.

A number of detailed observations on soil and water conservation activities made during the team's field visit are discussed in appendix 1. Some of those observations have prompted specific recommendations (6.2 (2)).

3.2 Food security

The team's opinion on the achievement in terms of food security is much the same as for environmental rehabilitation. It is assumed that some project elements have a positive impact, but there are no monitoring data that can be used for quantifying any such effect.

Assessing the food security impact of the project seems even more difficult than assessing the environmental impact. Considering the large project area, it is not likely that any impact of the project on the average food security of the whole area can be measured. It should be possible, however, to assess certain project elements in terms of any improvements in the food security of the beneficiaries of those project elements. The Hashtribab dam and the fruit gardening are examples of project elements where food security assessment would be feasible.

4 PROJECT ECONOMY

The Norwegian Red Cross funds available to the project in 1995 is US \$ 100,000 or about NOK 620,000. A request has been submitted to NRC for a similar amount for 1996. The amounts referred to in this section are provided by the project administration in Sinkat, and they are not fully consistent with the amounts found in NORAD / Norwegian Red Cross project documents.

In addition to NRC funds the project is able to obtain funds/inputs from other sources:

- Government funds, as a proportion of the funding of planned and agreed projects. The government contribution to certain specified activities is increasing, from 10% in 1994 and 30% in 1995 to an assumed 50% in 1996.
- Contributions (funds) from private persons or organisations
- Contributions (materials/labour) from the concerned communities.
- Income from renting out own equipment (loader)

An estimate of project costs covered by the NORAD / Norwegian Red Cross allocation is presented in appendix 2.

The total project cost per year related to 'a fairly high production level' (comprising 20 wells/60 tons of cement, 4 soil erosion schemes using 5 tons of steel each, agricultural activities and mini-projects) was in the 1993 evaluation calculated to NOK 1.35 million including NOK 100,000 for investment in equipment.

In 1995 the NRC funds available for the project is US \$ 100,000 (NOK 620,000). However, project costs (especially salaries) have, if measured in US \$ or NOK, been reduced considerably, and it seems from the figures obtained that activities can be carried out at half the cost in 1995 compared to 1993. If these figures are correct, a considerable real term increase in costs (especially salaries) may be expected in 1996.

The funds requested from NRC for 1996 (US \$ 100,000 or NOK 620,000) will be used to cover the cost of the project organisation (salaries/administration/ general transport) and project activities, about half of the funding for each. The project administration would have the capacity to plan and implement more development activities without increasing organisational costs if additional funds were available.

The level of activities in the project is significantly increased by additional inputs from government and private contributions in cash and from community inputs in materials and labour. Government contributions are in 1995 by agreement up to 30% of the costs of approved projects. These costs do, however, not include transport costs, and the government's share of the total project costs is therefore a lot less than 30%. However, the government contribution is a positive step in the direction of increased self-reliance. Government input is in 1996 assumed to be up to 50% of the costs of the activities.

The project intends to rent out its loader for part of the year. The income that can be obtained from this is not known, but the aim is that the income will cover the total operational costs of the loader over the year, i. e. that this will be a means of financing rural development activities.

5 PROJECT PERFORMANCE IN RELATION TO THE 1993 EVALUATION

In appendix 3 the conclusions and recommendations from the 1993 evaluation are presented and related to the recent developments in the project. The review team found that most of the findings from the 1993 evaluation are still valid in 1995.

The evaluation team from 1993 found that the project objectives are very generally stated, and need to be specified for the purpose of monitoring and evaluation. As a consequence of objectives being general, long term and without indicators, the evaluation team found it unfeasible to quantify the **effectiveness** of the project, i.e. to what extent the project has achieved its objectives.

The project **outputs**, however, could be quantified (number of wells rehabilitated, dams constructed, seedlings distributed, VIP latrines built etc.). The evaluation team found that the project had implemented a multitude of activities, and that the output was satisfactory.

The 1993 evaluation team also assessed institutional aspects, and found that SRC/NRC Sinkat had become a more efficient and self-reliant organisation. The team also commented that the relationship with SRC's central organisation and government departments seemed to be good on a personal basis, but would probably benefit from a more formal clarification of mutual duties and obligations.

The evaluation team found that the project is not sustainable in financial terms, i.e. it will need continued funding from Norcross, government or other agencies. However, the team also found that Norcross, Sinkat appeared as a dynamic and efficient team which forms a very useful tool for development activities in the area.

The following recommendations from the 1993 evaluation have so far not been followed up:

- A monitoring and reporting system for the project activities should be developed.
- An assessment should be made of the agricultural activities, in terms of activities, costs, technology and expected benefits/impacts.
- A study of the carrying capacity of land should be made.
- The construction of VIP-latrines should be reviewed.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

- (1) Norcross, Sinkat appears as an effective and dynamic team which is a very useful tool for development activities in the area. The team has developed into a self-reliant organisation in terms of administration and management, and has the technical capabilities required with some external assistance which can be obtained in Sudan (through RESAP or consultants).
- (2) The strategy of Norcross, Sinkat, to build good relations with co-operating governmental and non-governmental organisations and to plan and implement development activities in close co-operation with the target groups, appears very successful and should be considered as a model for other similar projects.
- (3) Norcross, Sinkat is considered to have the capacity and capability to effectively and efficiently administrate a considerably higher level of activities than is possible with the funds available today.
- (4) The lack of an adequate system for monitoring activities and effects of the project has been emphasised in previous evaluations. It is still difficult for outsiders to get data and information which makes it possible to present clear objectives and targets and verify corresponding achievements in quantified terms.
- (5) The Joint Project is to an increasing extent being supported through government and other contributions. However, this support is limited and will most likely be limited in the future, and it is not likely that the project can be sustained without external funding.

6.2 Recommendations

- (1) The following recommendations from the 1993 evaluation have not yet been followed up, but are still considered valid:
 - An assessment should be made of the agricultural activities, in terms of activities, costs, technology and expected benefits/impacts.
 - A study of the carrying capacity of land should be made.
 - The construction of VIP-latrines should be reviewed.

- (2) In terms of technical design of project components, the team will propose that the following steps are considered:
- Better use can be made of flood water distribution structures (Hashtribab-dam). On the flood plains a system of smaller distribution canals and basins would be useful to increase infiltration.
 - Rainfall is hardly enough to produce a crop under rainfed conditions. It could be worthwhile to assess the costs and benefits of a much larger scale water harvesting plant for irrigation, similar to the dam recently constructed by government for water supply to Sinkat town.
 - Water harvesting for tree production can be improved by the construction of half moon basins.
 - Use of solar energy for the growth of vegetables in gardens along the main wadies should be considered.
 - Gully control structures should be designed according to guidelines prepared by Noteby (1987)
- (3) In terms of future development activities in Sinkat district, continued efforts should be made to merge the present activities where Red Cross / Red Crescent is involved.
- (4) A monitoring programme should be implemented, including at least the following components:
- Temperature, rainfall and surface runoff
 - Project costs broken down on project activities
 - Effectiveness in terms of indicators for food security, environmental rehabilitation and human health (food security and environmental rehabilitation are the primary objectives of the SSE program, while human health is assumed to be a primary concern for Red Cross / Red Crescent).
- (5) The NORAD contribution to the project should be transferred from the SSE program to regular NGO (Priv.org.) support, starting from the beginning of year 1997.

APPENDIX 1

OBSERVATIONS DURING FIELD TRIP IN THE PROJECT AREA

Day one, visit to the Oudros area.

The Oudros area is laying in the vicinity of the main office of the project, although the different sites visited were scattered over a large area. The area is mainly flat, intersected by dry riverbeds(wadi).

The wadis have surface water only for short periods during the rainy season. Through flash floods they convey the runoff water from the mountains through the lower laying flat areas. For only a short period, the farmers along the wadis have the possibility to utilise this water.

Below an overview of this utilisation is given. The overview is based on a one day visit and can therefore not be complete. Wherever possible, some remarks and recommendations for improvement have been given.

The Hashtribab dam.

The main objective of the dam was to divert runoff water to agricultural lands. One diversion canal had been constructed, diverting the runoff water to a large plain. Recently, the construction of a new runoff canal had been started with the aim to increase the area to be inundated by the yearly floods. The potential area for cultivation is estimated at 300 feddans(1 feddan = 4200 m^2) with an estimated output of 2 - 10 sacks of sorghum per feddan (1 sack = 90 kg)

Remarks.

The water is only infiltrating the soil as long as the runoff period lasts. However, the infiltration time for water can be increased by "catching" the runoff water in so called small basins. This will increase the amount of water available for the crops. (Some kind of constructed basin was later seen in river beds). The Water Resources Monitoring Program, Assessment Report(Noteby, April 1993) mentions that a system of distribution canals for flood water have been planned in the plain. This system should be implemented in connection with the construction of the proposed basins. This will have a positive impact on the food production.

A citrus/guava plantation.

Citrus and guava trees had been planted in the wadi and were producing fruits. In the early growing stages they had been watered, but were now growing without irrigation. The root system had most likely developed into the zone of capillary rise from the ground water table. This provides the water necessary for evapotranspiration. The project officer informed that similar examples were to start in other places.

remarks

A prerequisite for such a production system is that the effect from capillary rise from the ground water table should be within reach of the root system.

It is also possible that similar effects can be achieved with other fruit trees like mangoes.,

Diversion structure.

The flood of 95 had destroyed an earthen diversion structure which had been constructed in the wadi. This had reduced the possibilities for water supply to a sorghum crop which would result in a complete crop failure.

remarks

The chances for failure of such a structure in the wadi are big because of the nature of the runoff. Rebuilding the structure in the same form at the same place will most likely lead to the same result unless its size is increased and reinforcements are used for protection.

Vegetable garden.

A vegetable garden had been established along the wadi. Water was pumped from a well by an electrical pump. The electricity was supplied by a diesel powered generator. The total area of the plot was 1 ha and 35 farmers were producing vegetables like tomatoes, potatoes, onions and beans and fruits like guavas, lemon and pommes granat.

The potential for such plots along the wadis is considered to be big. A proof of this was that the private sector from Port Sudan has sought and been granted permission by the Sinkat project committee to invest in a similar project along the wadi.

remarks

Systems like these are vulnerable primarily because ground water is available only in small pockets in the ground, and it is not clear whether or not the water will be depleted by the ongoing activity. The present project design also needs diesel fuel. The sustainability of such a design in a remote area of Sudan can be questioned. The possibility of utilising solar energy as a power supply for irrigation water application should be investigated. There is a great potential for vegetable gardens along the main river courses.

Tree plantations.

A small area, where acacia seedlings had been planted in 1994, was visited. After some initial watering, the small trees are growing without watering in 95. The trees are looked after by a family, living nearby the plot, to prevent damage to the small trees by grazing animals.

remarks.

Acacia trees are slow growing species. The advantage is that the consumptive water use is small compared to, for example, the Eucalyptus tree which also often is used in reforestation. Water harvesting could be used to enhance the growth of the tree. Half moon shape basins could be constructed on the downstream site of the tree to catch runoff water. In this case a bigger spacing between the trees is necessary to generate enough runoff. It should be considered to grow fruit trees. At other places, under similar conditions, pistachio and almond trees are grown.

Water harvesting.

A water harvesting scheme had been established in a dry river bed. River flood water was caught by half moon shaped basins. The bounds around the basin were constructed manually by using soil. The height of the bounds was approximately 50 cm. Sorghum, which was grown in the basins, was performing well.

remarks

Water harvesting schemes like this can be used when the water flow in the river bed is not too high. This system of basins is recommended to be implemented in the area at the Hashtribab dam. The system of half moon shaped basins is also often used in reforestation projects.

Day two, visit to Erkawit.

In the morning of day two, an earth dam in the vicinity of Sinkat town was visited. The dam stored water for the drinking water supply to Sinkat. The construction had been carried out by the Sudanese government authorities at a total cost of US\$ 60.000,-.

Also the area of Erkawit was visited. Erkawit is situated at a one hour drive from the main office of the project. Its altitude is approximately 1000 m above mean sea level. Because of its altitude, the climatic conditions are different from the Odrous area. This is mainly reflected in the lower average temperature. The terrain is mountainous with, at some places very little or no vegetation at all. Because of the lack of the vegetative cover, erosion is one of the main problems in this area. At some places the landscape was intersected by severe gullies.

Different projects had been initiated by the project in co-operation with the people. Wells had been rehabilitated and were used for vegetable and fruit production, besides their use for drinking water purposes.

The main attention however was directed towards the gully erosion. It is important to address the issues of soil and water conservation in the area. Continued extension of the gully system will in the long run pose a threat to all agricultural land.

In the Erkawit area, efforts were undertaken to control gully erosion by the construction of check dams in the gully. The check dams were constructed of gabion boxes and locally collected stones. Some of the check structures visited, did not function due to poor design. Water had started flowing around the structure. Also questions were raised concerning distances between the structures. As is understood by the review team, design criteria for check structures in gully erosion control can be derived from a report, prepared by Noteby in 1987. (Integrated Development Project. Sinkat District, Sudan).

At one place in the project area a gully erosion control program had been successfully implemented. Almost all the gullies had disappeared through re-sedimentation. However, at the same time action has to be undertaken to improve the vegetative cover of the land and thereby reduce the overland flow. Unless this is carried out, erosion will not be stopped and new gullies be formed.

Other possible actions to get control over the erosion.

Gully erosion is the final stage in the erosion process. In order to prevent erosion, it is necessary to get in control of overland flow at an early stage. This can be achieved through the construction of terraces, bounds or basins which stop the overland flow and at the same time increase the infiltration.

In the case of Erkawit, the rainfall is most likely hardly enough to grow a sorghum crop under normal rainfed conditions. Therefore, additional water has to be provided which in this case can be obtained through water harvesting.

Water harvesting is the collection of runoff for agriculture production by the construction of basins or bounds. The area immediately upstream from the basin or bound should be cultivated, while the remaining area between the sorghum and the next bound uphill should be used for the collection of runoff.

It is difficult to give design criteria for such water harvesting systems, especially when no climatic data are available. In any case, trials should be carried out to find the best relation between the cultivated area and the area used for the collection of runoff water. In addition it is important to have deep soils with a good water holding capacity.

When the climatic data show that the rainfall pattern is too erratic for food production, a program of reforestation could be started. The principle of water

harvesting is the same. Normally, tree seedlings are planted in half moon shaped basins. Runoff water is collected and infiltrated in the basin.

The best trees are those locally available, although also other species, which have proven to be successful elsewhere under similar climatic conditions, might be selected.

Often people tend to introduce fast growing trees in these programs. However, the review team wants to warn against this as these trees also have a high consumptive water use.

The environmental degradation has reached a very serious level. Large areas are bare with no vegetative cover, leaving the soil without any resistance against the erosive forces. Besides the programs for erosion control, water harvesting and reforestation, a program with enclosures might be introduced. Certain areas can be excluded from all grazing and cutting of firewood. Elsewhere in Africa, these programs have proven to be effective in regenerating vegetative growth.

Several other actions might be undertaken. The local staff often have a better overview over its possibilities. It is however very important that programs concerning soil and water conservation receive high priority in the area before the degradation of the land has reached the point of no return.

To be successful with such programs, a minimum program of data collection and monitoring has to be implemented.

- The collection of climatic data should receive more attention. A minimum of rainfall and max. and minimum temperature should be collected in different project areas.
- If possible runoff at some selected sites should be monitored and rainfall-runoff relations be established.

The results of the monitoring program already carried out by the project are important in this case and should be reported.

Monitoring and data collection will give important inputs to the planning of the scarce water resource in the area. All the activities concerning agricultural development in the Sinkat area, whether it be irrigation, utilisation of scarce ground water resources, water harvesting, dam construction or erosion control, are to be based on such data. The absence can lead to wrong design and hence disappointment among the project participants.

APPENDIX 2
PROJECT COSTS ACCORDING TO LOCAL PROJECT MANAGEMENT

Cost estimate for one year operation (NOK)		Approximate distribution of costs for assumed NRC allocation of USD 100,000	
Costs in 1993 cost level (Ref. Evaluation Report 1993)		1995	1996
Salaries	420,000	151,000	200,000
Transport costs, adm.	50,000	40,000	50,000
Administration, etc.	80,000	42,000	40,000
Investments (Oslo)	100,000	-	-
Sum, recurrent costs	650,000	233,000	290,000
Transport, projects	150,000	130,000	150,000
Other project allocations	550,000	257,000	180,000
Sum, project allocation	700,000	387,000	330,000
Total estimate for one year (1993 cost level)	1,350,000	620,000	620,000

Comments:

1. First column shows an estimate made during the 1993 evaluation, representing costs related to 'a fairly high production level'.
2. Second column shows the approximate distribution of available funds for 1995 (USD 100,000). Measured in NOK the project costs have gone down dramatically, although staffing and vehicles are at the same level.
Especially, salaries seem now to be about one third of the 1993 level, and in total the costs of salaries, administration and transport (measured in NOK) is about 50% of what they were in 1993.
3. Third column shows the assumed allocation of USD 100,000 in 1996. It is expected that salaries will increase (in real terms) and also fuel costs. Less funds will therefore be available for projects.
4. Government contribution is quoted as about 10% in 1994, 30% in 1995 and assumed to increase to 50% in 1996. This percentage is only valid for direct project funding, transport not included. A government 'contribution of 50%' will therefore probably mean a maximum of NOK 180,000 equivalent, giving a total project budget of about NOK 800,000, out of which the governments share is maximum about 23%.
5. The total project input/value is higher than the above figures show, due to the input from the communities, which is assumed to be considerable, although no estimate exists.

APPENDIX 3

MAIN FINDINGS IN THE 1993 EVALUATION AND THE PROJECT'S FOLLOW UP ON THESE FINDINGS

The Project was evaluated in 1993 (Åge Rønningen, Idris Salim, Amin Omer). The present review team has partly used the conclusions and recommendations of this evaluation as a reference point for the review. The main points from the 1993 evaluation are summarised in the following.

Project objectives have been formulated at the start of the Joint Project. The objectives are very generally stated, and should, for the purpose of monitoring and evaluation, be specified at development, immediate and output levels with indicators and external factors. The purpose of monitoring and evaluation is ultimately to assess the benefits and impacts (to what extent people are using more water, irrigating more land, growing more dura, being able to cope with changing conditions) resulting from the Project, not just the outputs (number of wells, dams, latrines, etc.).

Central government has established a central body to co-ordinate the work of NGOs in Sudan. Changes include measures such as disclosure of funds disbursement, vetting of personnel, teaming up with a national counterpart organisation and selection of types of activities and places of operation. Provincial government administration seems to have a strained relationship with NGOs, as tension arises when the two parties perceive the other as asserting power (money vs. decisions). At the local level, the relationship between NGOs and government administrators seem to be smooth and co-operative. Important co-operating partners in Sinkat is Sinkat District Council and Department of Soil Conservation (SCLUPA), and non-governmental organisations such as SRC, RESAP, other NGOs working in the area and local popular and community based organisations. The relationship with SRC and government departments appears to be good on a personal basis, but would probably benefit from a more formal clarification of mutual duties and obligations.

The Project has implemented a multitude of activities in the Sinkat Province. Rough estimates would indicate that the Joint Project activities in the period 1988-92 will have a possible impact on up to 20 per cent of the total estimated population of 70,000. The full benefit of the activities (increased irrigation, increased availability of water, improved agricultural practices, etc.) can only be assessed over time.

Assuming continued financial support to the Project, the outputs with the present organisation, even with a reduced budget, can be significantly increased. SRC/NRC, Sinkat has obviously become a more efficient and self-reliant organisation over the initial 5-year period.

The original objectives of the Project were to help the Beja nomads to overcome previous droughts and increase their ability to cope with climatic conditions in the

future. These general objectives can be considered relevant in today's situation, but there are risks involved: (1) If the climatic conditions are generally worsening over time, the Beja nomads may be forced to leave the area. (2) The next generation of Bejas may have priorities towards urban services and possibilities, rather than continuing the nomad life of their parents. (3) The government's plan to re-settle people in villages will, if becoming reality, require reconsideration of the Project's objectives and strategy.

The **effectiveness** of the Project, i.e. the extent to which the Project has achieved its objectives, can not be quantified, as the original objectives are general, long term and without indicators. The Project **outputs** have been quantified (number of wells rehabilitated, dams constructed, seedlings distributed, VIP latrines built, etc.). However, the impacts of these outputs require systematic monitoring over a longer time in order to be verified.

Impacts of the Project on the people and on the environment can therefore only be assessed in terms of likely future impacts, with conditions related to continued support to the Project, target groups' continued motivation and involvement, etc.

The **sustainability** of the Project, i.e. whether local institutions will continue to pursue the Project objectives if external support is terminated, will depend on political priorities and technological, economic/financial, institutional, socio-cultural and environmental aspects. The Project is not sustainable in financial terms, i.e. it will need continued funding from Norcross, government or other agencies. However, the Project now appears as an increasingly efficient and self-reliant agency for development activities, and will, with an input of say NOK 1.5 million per year, most likely secure an activity level which is considerably higher than up to now in the Project.

Conclusions and recommendations from the 1993 evaluation

The conclusions and recommendations from the 1993 evaluation have been reviewed by the team and discussed with Norcross in Sinkat. The conclusions and recommendations are commented on in the following.

Project administration

- (1) *Norcross, Sinkat has over the period from Project start in 1986 developed in a positive direction towards technical and administrative self-reliance, and building good relations with co-operating governmental and non-governmental agencies in Sinkat. Norcross, Sinkat appears as a dynamic and efficient team which forms a very useful tool for development activities in the area.*

This conclusion is regarded as valid in 1995.

- (2) *The external input to the Joint Project (Norconsult/Noteby) has been necessary and useful in the initial period. In the present situation, necessary external support should be obtained in Sudan, through RESAP or local consultants.*

It is considered by the Team and by Norcross that any technical assistance required by the project can be obtained in Sudan.

- (3) *It is of great importance that the overall objectives of the Project, its strategy, target groups, indicators of success, and external factors are thoroughly discussed and formulated in specific, verifiable terms. The quality of future monitoring and evaluation is depending on this. The Logical Framework Approach is a useful tool for such analysis and is apparently being used in the DERUDEP Programme.*

The above conclusion is regarded as valid in 1995. Little work has been done in the period from 1993 to 1995 to improve the basis for future monitoring and evaluation.

This part of project planning will in the opinion of the Team be even more important if the integration of the three projects in the area will materialise.

- (4) *If the Project is to be reorganised, either by Norcross merging with SRC in Sinkat or all NGO programs in the Red Sea Area being put together in one organisation, efforts should be made to maintain the momentum, knowledge and relationships built up by the Norcross, Sinkat.*

The above conclusion is considered by the Team to be even more valid in 1995. The Norcross project seems to have taken additional steps in the direction of target group participation in the planning and implementation as well as financial support from government and other sources.

Implementation

- (1) *The Joint Project has followed a strategy of orientation towards the needs of the population, and of seeking consent and involvement from the target groups. This strategy seems to have been successful, and should be continued and expanded.*

In the Team's opinion the above strategy is followed successfully by the project.

- (2) *The Project has to some extent (i.e. the irrigation schemes) spent significant funds on facilities which will benefit relatively few people. This represents a strong subsidy of "winners" and should for the future be given consideration, for instance as to whether beneficiaries should pay part of the cost of profitable schemes.*

The project is now operating on a more appropriate scale, and the above reservation is accepted by the project.

- (3) *The Project is involved in agricultural activities such as distribution of seeds, tests of forestry and legumes species, etc. The possible benefits and impacts of these activities are not clear, and should be subject to a special study. This study should also include investigations for the purpose of establishing the carrying capacity of the land in different parts of the area.*

The above observation is still considered valid by the Team. Norcross is claiming that they will want some more time for experimenting and collection of data before a special study is undertaken.

Evaluation

- (1) *The efficiency of the project, i.e. the outputs in relation to the costs, is regarded as satisfactory. Factors contributing to this are: reduced dependency on costly external support; constructions made to a large extent from materials found on site and with significant target group labour input; reasonable transport costs due to low fuel price.*

The above general conclusion is considered valid by the Team. The costs and outputs of Norcross is discussed in a separate chapter.

- (2) *The effectiveness of the project, i.e. how well the objectives have been achieved, is difficult to assess, due to vaguely formulated objectives, lack of monitoring data and the long term perspective involved in obtaining full benefits from activities such as irrigation schemes and forestry test plots.*

This is still considered a valid conclusion, and should be of concern, especially in the overall planning of a possible integrated programme for the area.

- (3) *The impacts of the project (the positive or negative effects on the population and the environment) must be assessed in a long term perspective. Positive impacts will be increased availability and use of water, increased agricultural production due to constructed irrigation schemes, benefits from soil erosion protection schemes and improved forestry and agricultural species and methods, as well as effects from motivation, education, awareness creation, etc. Negative impacts may result from the Project supporting "winners".*

The impacts of the project are perceived as positive by all involved parties. It will, however, be difficult to carry out quantified impact assessments in the future due to the lack of precisely formulated objectives, indicators and assumptions in the project documentation.

- (4) *The objectives of the project are still relevant, namely to increase the population's adaptability in the changing environment. The objectives may become irrelevant if in the long term the climatic conditions will worsen to an unbearable level. The objectives may also have to be reconsidered if the government carries out its plans to re-locate people to villages.*

The project is carried on the assumption that adaptability to changing and unpredictable conditions is the aim, and that project planning can not be based on an assumption that the climate is worsening as a permanent trend. The government plans to relocate people to villages do not seem to be a probable development in the foreseeable future.

- (5) *The sustainability of the project is assessed as follows:*

- *The project will need continued funding from outside (NGOs or government).*
- *The project is, with some external technical and organisational support, sustainable from the point of view of management and administration.*
- *The benefits and costs of project components can only be calculated with stated wide assumptions. However, such calculations should be carried out as better cost and income data become available in the future. Calculations for Hashtribab and Beramfi dams indicate positive economic returns, but shows clearly the negative economic effect of building dams in 1988 and still in 1993 not having achieved any income related to the investment.*
- *From a technological point of view, the project has had some difficulties (dams not functioning) and may suffer set-backs, for instance in relation to the expected agricultural benefits from the Hashtribab and Beramfi dams. The apparent success is in the way the Project rehabilitates wells and carries out soil erosion protection.*

In line with the recommendations in the 1989 evaluation, new dam construction should wait until the present ones have been completed and are functioning. The technology related to the agricultural and forestry activities should be evaluated separately. The way the VIP latrines are constructed should be reviewed (according to Noteby's comments).

At present, the technology of larger dams is not used, and the reservations above are therefore not important now. The project considers the benefits of the Hashtribab dam to be better than assessed in 1993.

Recommended actions

- (1) *A main activity in planning the future of the Joint Project should be a participatory workshop where government and NGO representatives discuss and specify further*

development objectives, strategy and organisation based on the experience available at present. The workshop should include all the Red Sea Area provinces.

Several workshops have been held to discuss integration.

- (2) *The Joint Project should, possibly with external assistance, develop a monitoring and reporting system for its activities, with emphasis on collection of data required to verify impacts on the population and environment.*

This has not been done so far.

- (3) *The Joint Project should, with external assistance, make an assessment of the agricultural project in terms of activities, costs, technology and expected benefits/impacts.*

This has not been done.

- (4) *The Joint Project should, possibly with external assistance, make a study of the carrying capacity of land in typical parts of the Province.*

This has not been done.

- (5) *The Joint Project should not consider implementing more dams until the results/effects/impacts of the already constructed dams have been verified over a period.*

This is also the opinion of the project.

- (6) *The Joint Project should during the coming period concentrate on well rehabilitation and soil erosion prevention, and continue agricultural and forestry activities, as well as "small projects" to the extent possible with available resources.*

This has been and is the project's strategy.

- (7) *The Joint Project should review the construction of the VIP-latrines.*

Not done.