



Africare

"L'Amélioration de la qualité de la vie en Afrique rurale
en développant les ressources hydrauliques, la production agricole, et les services de santé."

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REPORTING PERIOD: May 1 - July 31, 1984

ACTIVITY PROGRESS REPORT N° 2 ;
QUARTERLY REPORT ON THE ABECHE RURAL DEVELOPMENT PROJECT

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I GENERAL REFERENCE

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- Report Prepared By:
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 - . Fritz Etienne: Agricultural / Construction Engineer
 - . Manuela Euso: Forester / Ecologist
- Report Submitted On: September 12, 1984

II STATUS OF THE PROJECT ON MAY 1, 1984

A. Technical

1. Seed Distribution

The program was well ahead of schedule; the only remaining task in the field for the specialist was the supervision of the actual distribution of the seed. Follow-up work, of course, would later be necessary by the Africare technicians assigned to Abeche and by the local staff of the National Office for Rural Development (O.N.D.R.).

2. Hydrology Activities

As indicated in the previous quarterly report, labor intensive water retention projects, under the auspices of the World Food Programme (W.F.P.), had already begun in the Abeche area

/... before

before the arrival of the Africare agricultural/construction ~~engineer~~. These projects enjoyed an enormous popularity and the number of work sites was expanded quite rapidly. These sites included several of the Africare project sites: Moura and Tire, from Phase I; Dougouri, Batouma, and N'Gatar, from Phase II. Presented with this fait accompli upon his arrival in Abeche on March 22, the interim hydrologist joined these ongoing projects in an effort to direct them to ~~fruition~~. Africare also obtained AID's permission to participate at some work sites which were not included in the cooperative agreement. (See Annex NO.1 for an exchange of correspondence between Africare and AID on the location of these sites and the nature of the work). Dam design at several of these supplementary sites was badly flawed; unfortunately, work had reached such an advanced stage that it was impractical to change it.

This situation, with numerous water-retention projects already in progress and an obvious need for technical expertise, entailed extensive changes in the project implementation schedule. (See Annex No.2, "Major Implementation Actions (Phase I and II)", from the original project proposal). The Phase I activity at Sougour, for example, was postponed since there were already so many construction sites to supervise. On the other hand, the activities at Dougouri, Batouma, and N'Gatar, which had originally been scheduled for Phase II, were advanced to Phase I.

3. Forestry/Ecology Activities

The AFRICARE forester/ecologist, Manuela Huso, arrived in Abeche on July 9, 1984. Progress prior to her arrival included the support of 16 Water & Forests Service agents

/... and

and the hiring of 20 laborers to work in the Abeche nursery. WFP paid their wages with Food For Work. WFP also had funded the construction of 15,000 clay pots in which to grow seedlings. The nursery appeared to be surprisingly well operated given the limited resources available to the Water & Forests Service (W&F). It contained many more seedlings than expected and the personnel seemed organized and well informed about their jobs.

As of July 9, 1984, the Abeche nursery contained approximately 26,000 seedlings of ten native and introduced tree species, as well as fruit trees and ornamental shrubs and flowers. There were three wells within the nursery grounds but only two were functional. Both of these were recharging at low rates and will need to be deepened and improved before further expansion of the nursery will be possible. The wall surrounding the nursery was in a state of extreme disrepair. Reconstruction of approximately 850 meters will be necessary before the next planting season to assure adequate protection of seedlings from goats and other livestock.

No forestry projects had yet been started, although the W&F had several in mind and was awaiting the arrival of the Africare forester to begin.

B. Administrative / Logistics

The interim hydrologist was expecting the arrival of his replacement, Frits Etienne, in early May. A one or two week transfer of duties was planned. Manuela Huso, the forester/ecologist, was due in country in late June.

The groundwork for the Phase I water-related activities
/... had

had been laid by the interim hydrologist. Nevertheless, the administrative structure for implementing a project of this scope - other than the actual structure (the office) itself - was practically non-existent in Abeche. Establishment of such a structure, from recruitment and training of local personnel to accounting policies in a town with no bank, would be one of the top priorities for the Africare Chief of Party in Abeche.

III PROGRESS AND ACCOMPLISHMENTS DURING THE PRESENT REPORTING PERIOD

A. Technical

1. Seed Distribution

Except for a small quantity of bottomland sorghum which remains to be distributed in early September, the seed was distributed, as scheduled, by mid-June. The planning and execution of the distributions were carried out conjointly by the specialist and by Mr Ahmat Abderamane Haggar, the O.N.D.R. Chief of Sector for the "Geographical Ouaddai" region. Mr Abderamane's whole-hearted participation was crucial to the success of the program. Seed transport and logistical support were provided by the W.F.P., whose assistance extended far beyond the scope of the Memorandum of Understanding (dated December 12, 1983) between Africare and W.F.P. The active contributions of the local W.F.P. staff and the availability of W.F.P. transport vehicles were indispensable to the program. ¶ The specialist returned to Abeche, as planned, in mid-May. It had originally been intended in the implementation schedule for the seed program (see Annex NO. 2 of the previous quarterly report) that the actual distribution phase be coordinated by the permanent Africare staff in Abeche. However, given the amount of work and the enlarged number of work sites awaiting the newly-arrived agricultural/construction engineer, it was not feasible to expect him to handle these duties as well. Accordingly it was decided that the specialist would
/... remain

remain in Abeche for the duration of the distributions.

Prior to his return to Abeche on May 14, a survey of the active farming population (adult field hands) and the area under cultivation was conducted by extension agents from O.N.D.R./Abeche in collaboration with the local cantonal chiefs. The survey results were carefully evaluated by the specialist and the O.N.D.R. Chief of Sector. On the basis of all the available documentation and statistics available to them, including this O.N.D.R. survey, a distribution plan was drafted. It reflected an important modification in the seed program: the expansion of the geographical area to be served beyond the original target area, the Abeche Rural Sub-Prefecture (see section III A.1. of the last quarterly report for a further discussion of this subject). Only half of the seed, 250 (metric) tons, was reserved for the Abeche Rural Sub-Prefecture; the other half was programmed for the neighboring sub-prefectures of Goz-Beida, Am-Dam, Adre, and Biltine. AID/Chad had already been informed of the need to reduce the quantity of seed for distribution in the Abeche Rural Sub-Prefecture and its agreement in principle to send a portion of the 500 tons beyond that area had likewise been obtained. Its approval of the specific quantity involved, 250 tons, was sought and received at this time.

The plan was then submitted to the ^{Prefect} of Ouaddai for his appraisal before it was put into action. Distributions within the Abeche Rural Sub-Prefecture were begun on May 27. It was decided to start the deliveries in the southernmost cantons, where farmers were likely to plant a little sooner than in the northernmost ones. Transport of the seed was provided at a low cost (operating costs) by W.F.P. The actual distributions were supervised by the specialist and by the O.N.D.R. Chief of Sector in all but a few instances, when the latter's duties (F.A.O. seed program, etc.) precluded his participation; /... the cantonal

the cantonal chiefs, or their delegated agents, were also present. A table with the distribution schedule for the Abeche Rural Sub-Prefecture, along with a map indicating the distribution sites, is included in Annex No.3. These sites - up to three locations per canton - were selected on the basis of the recommendations of the seven cantonal chiefs and on the basis of their accessibility to the heavy transport vehicles and to the beneficiaries. In most cases, one distribution per day was conducted through June 17. Various latecomers were served for another week in Abeche itself.

As for the distributions in the four outlying sub-prefectures they were supervised by agents from O.N.D.R/Abeche who accompanied the vehicles. A table of these distributions and an adjoining map with the various sites are included in Annex No.4. The first vehicles for the outlying sub-prefectures were loaded on May 31 and the last distribution was conducted on June 23. A table of the two distribution programs is included in Annex No.5.

2. Hydrology Activities

a) Dougouri:

Dougouri, as stated in the previous quarterly report, has become somewhat of a showcase for visiting officials. Though work is far from complete we now expect to have water all year-round. The remaining construction activities have two objectives:

- 1) stabilization of earth embankments protecting the reservoir thus substantially reducing the amount of maintenance needed
- and 2) construction of a drop inlet spillway to provide adequate control of the reservoir's water level, prevent flooding and to ensure emergency water supplies to downstream inhabitants during periods of extreme drought (the dry season). The surveying team has done its required field work here and this site is presently the only one that has been properly surveyed.

b) Tire:

Description: A 125m U-shaped dike forming a crescent-shaped

/... haffir

haffir (a sort of artificial pond or lake) has been completed. Tire village is one of our neediest project sites with no local water source apart from a deep-bore well equipped with a vernier foot pump which does not work. Villagers are obliged to walk 7 and sometimes 14 km to fetch water. A high priority objective is to have this well rehabilitated. New parts have been given by local Abeche authorities and a team of two mechanics has been dispatched to this area to implement the much-needed repairs. Presently, this well is still inoperative; the arrival of additional parts from N'Djamena is awaited. Construction of a 50m^3 reservoir has started but its usefulness will probably be delayed by the logistic problems involved in repairing the well. The building of the haffir has gone well with over 2000m^3 of densely compacted laterite having been displaced and 50m^3 of rocks having been carried from a site 2.5 km away by intensive labor methods yielding a connected efficiency rating of $0.5 \text{ m}^3/\text{day}/\text{person}$. If consideration is given to the difficulty involved in removing compacted laterite and manual rock transportation, this figure ($0.5 \text{ m}^3/\text{day}/\text{person}$) is a clear indication of the high degree of worker motivation present here. The last rains have proved the feasibility of this project with 150m^3 of runoff water having been captured. Though this amount is small and rapidly being depleted it is recommended that an additional 6000m^3 of fill be removed to increase storage capacity and that construction of the 50,000 l cylindrical reservoir outlined in the project proposal be completed by the end of this year. By then it is hoped that ^{the} deep-bore well will be fully operational and used to fill the cylindrical reservoir before the worst part of the dry season arrives.

c) Abououdam:

Description: Construction activities proposed by the design team have yet to be initiated with work scheduled to start in early October. Minor technical and logistical assistance has /... been

been provided for the construction of two wells which are now nearing completion and the construction of a small water diversion dam, 7m long and 3m wide, which has greatly aided the success of a small vegetable project located 30m from the wadi (a stream or watercourse that is dry except during periods of rainfall).

d) Batouma:

The Batouma haffir is complete with a measured storage capacity of 25,500m³ when full and will be full with just one more rainfall. Originally built in 1974 by a U.N.D.P/I.L.O team headed by Mr Mayen, it had since then been maintained by the United Evangelical Mission (U.E.M.) which first planted fruit and neem trees there. This year it has been rebuilt by the U.E.M. using Food and Agriculture Organization/Food For Work (F.F.W) intensive labor methods. Batouma reservoir provides water for 4 villages, herds of goats, sheep and cattle and an ample recharge rate for a 45m hand-dug well located there. Also in place are one spillway and dike system controlling the flooding of the watershed area, one directional wall diverting water flow into the reservoir and one erosion control spillway at the entrance of the reservoir. In its present state of completion, Batouma will be the only year-round source of water for the entire area. Due to its importance it is recommended that at the beginning of the next dry season the reservoir walls be reinforced with rock to guard against erosion, that the 400m directional wall be upgraded and protected by live fencing and that the well be collared to protect it from contamination. Batouma is an "oasis" and the forestry component of this program will be extensive at this site.

e) Aboundroug:

Though this project is not outlined in the project proposal

/... Africare

Africare has asked for and received approval for the implementation of a water-retaining structure at this site. Basic components include a 100m dike to make the most of the flash-flooding that occurs there during the rainy season and three small ditches to provide enough water in nearby fields for cultivation. Experience during the present rainy season has shown that under the unstable conditions present, with highly porous and silt and resulting settlement problems, rigid structures such as those of monolithic masonry, while very effective at first, are the first to fail when subjected to cyclic thrusts. Substantial damage to the dike and its mud masonry core has resulted from high erosion, compounded by under-estimated peak flows. Since this project has proved itself to be a very valid one and given the importance of this area as a traditional "green spot" and the dire needs of these villagers who have suffered several successive crop failures, Africare/Abeche proposes to restart work at Aboundroua after the rainy season.

f) Atilo:

Atilo is an excellent example of the uselessness of mud masonry utilization in spillway design. Atilo also demonstrates the urgent need for the formation of a qualified surveying team for gathering essential data. This will permit proper hydrologic calculations for spillway design and specifications. Extensive damage here resulted from the faulty conception and design of the structure. Wing walls, cut-off walls and flood gate were absent. This project which was 85% complete at the beginning of this reporting period consisted of a mud masonry wall 40m long, 3m high, and 1m wide. Modifications for the resumption of work here will include the extensive use of gabions with effective protection provided by an apron which is designed to settle without fracture and to adhere to the ground as scour occurs. Erosion and scour of the embankments /... will be

will be countered by an appropriate revetment. It is thought that such a scheme will make the best use of the rocks which have already been transported there and, while still being a very low cost project, will hopefully be a semi-permanent solution to this area's problems requiring very little maintenance. Final design specifications will be provided after the topographic survey and the gathering of pertinent hydrologic data. The estimated completion time will be $3\frac{1}{2}$ to 4 months with intensive labor provided by the WFP/FFW component of our accord. More recently, 8 bags of cement have been given to make much needed repairs to the village well and to make it functional.

g) Quere (Were):

The project at this site consists of a highly successful cement masonry spillway which, though very small, has enabled the retention of a very large amount of water filling the upstream basin for well over 500m. This water has enabled the recent planting of several hectares of millet and, for the first time in this village, the inhabitants were confident enough to start numerous vegetable garden projects, mostly tomatoes and cucumbers. This project is more successful than foreseen, completed, and will need very little maintenance or improvements during the next year. The chief of the Mondjobo canton has been outstandingly helpful and a large part of the success of this project is due to him.

h) Moura:

The cutoff wall and headwall foundations have been constructed; we are awaiting the dry season to resume construction of a big ogee-type spillway.

/... i) Miscellaneous Activities

1) Miscellaneous Activities:

1) Surveying teams:

Surveying teams are being established to fill an urgent need for technical data. Their primary goals will be to provide altimetical and planimetical data that will enable calculation of peak flows on the one hand and basic guidelines for appropriate spillway design criteria on the other hand. For this purpose nine candidates have been carefully selected to undergo a training program of 150 hours in the classroom and 50 hours in the field. Some of these trainees may be hired as Africare/Abeche employees.

2) Water and Forests Service:

2 wells have been rehabilitated.

3) Public Health and Hygiene:

Logistical and technical aid has been given to these local officials to help them survey all of Abeche's wells. So far, over 100 wells have already been surveyed and evaluated for performance.

3. Forestry / Ecology Activities:

It was not anticipated that a significant number of seedlings would be produced in the nursery this year. As quite a large number were available, however, it seemed appropriate to immediately begin, on a small scale, several tree planting projects in cooperation with the W&F. It was important for these projects to begin quickly in order to take full advantage of the current rainy season. Improvements at the W&F office and nursery were viewed as secondary objectives for this period. A list of projects begun ^{during} this period follows, with a brief description of each.

/:.. Reforestation

Reforestation on the road to Adre, 1km. east of Abeche:

A 5 hectare plantation is planned to begin the restoration of a green belt around the city. It will contain 2025 seedlings of assorted local species. By the end of this reporting period, boundaries had been delimited and the holes were being dug by 50 Food for Work laborers. A live fence will be planted around the area to provide protection from livestock and microcatchments known locally as "diguettes", dug at the base of each tree to increase water penetration into the soil. Two guards, also being paid through Food for Work, will be employed to protect the seedlings until the live fence becomes effective. Planting has been delayed until the next rainfall.

2) Plantation at Abougoudam, 25km. southwest of Abeche:

A $\frac{1}{2}$ hectare plantation was begun near the town to provide food, gum and shade adjacent to a low-lying wet area near the well. 189 seedlings of various species were planted by 12 Food For Work laborers. Holes have been dug in preparation for the planting of a live fence around the area. "Diguettes" were constructed at the base of each seedling and 1 guard has been hired to complete the protection.

3) National Tree Week; Abeche:

220 seedlings will be planted in Independence Square, the central square in Abeche. The high visibility of this project will help to heighten public awareness of the need to plant and protect trees. The digging of the holes is being coordinated by the Water and Forests Service and the work is being done by volunteers of the community youth organizations. The actual planting will take place after the next rain. The Prefect of the Ouaddai will give a public address and will place the first seedling in the ground. Trees will also be given away to the public to be planted in their own courtyards and along
/... the

the streets in front of their houses. This will be the first time in several years that this event has been celebrated.

4) Water & Forests Service's nursery well in Abeche:

Work began on deepening one of the two functional wells in the nursery. In ten days the well was deepened 1.5m through hard work. A rising water table forced postponement of further work until the dry season. One well digger and three laborers were paid through Food For Work.

5) Water & Forests Service; office improvement in Abeche:

Africare bought one table, one desk, six chairs and a metal file cabinet for this office. Essential office supplies (paper, stencils, pens, etc.) were also ordered.

6) Tree planting at the Africare office and residences in Abeche:

One hundred seedlings were planted by 7 Food For Work laborers around the Africare office. A groundkeeper/guard was hired to water and protect the seedlings. Holes have been dug for approximately 70 seedlings to be planted around the Africare residences.

B. Administrative / Logistics

As anticipated, this reporting period has been used to regularize the Africare/Abeche operation. This has included extensive work in the office and the housing of the expatriate staff, the hiring and training of local personnel, and the initiation of systematic procedures to permit greater efficiency and control.

/... IV Analysis of

IV ANALYSIS OF CONSTRAINTS / PROBLEMS AND RECOMMENDATIONS PROVIDED

A. Technical

1. Seed Distribution:

The preparation and execution of the final phase of the seed distribution program proved more difficult and more time-consuming than had been anticipated by the specialist. In planning the distributions for the original target area, the specialist and Mr Abderamane, the O.N.D.R. Chief of Sector, addressed themselves to the following questions:

a) Who are the beneficiaries ?

It was eventually decided to include the inhabitants of both the Abeche Urban Sub-Prefecture (the Abeche townspeople) and the Abougoudam Nomadic Sub-Prefecture, nomads in a floating administrative zone whose seat (Abougoudam) falls within the original target area, with those of the Abeche Rural Sub-Prefecture.

b) Where and how should the seed be distributed ?

Distributions in Abeche were originally considered, but the idea was discarded. Despite the impracticality of distributing the seed directly to all of the ultimate beneficiaries, the area's active farmers, it was decided to advance as far along the chain of delivery as feasible, in terms of time and cost effectiveness as well as accessibility of the sites to the transport vehicles. Within these parameters, the system of distribution centers within a given canton (or sub-prefecture, for the outlying areas) was established. The village chiefs were summoned to a given distribution center on the appropriate date by their cantonal chief, where they were served. They

/... were

were obliged to transport the bags of seed, usually by camel or by donkey, back to their village for final distribution.

c) When should the seed be distributed ?

By the return of the specialist in mid-May, a precariously small amount of grain was available to the impoverished rural population of the Abeche area. In addition, the first rains and the planting season were not anticipated until early July. With this unfortunate combination of circumstances, difficult times and no immediate prospects to plant, it was feared that much of the seed would be consumed. Despite some recommendations for a three or four week postponement in the seed distribution program, it was decided to continue on schedule. The assumption that the farmer would deplete his seed stocks was unproven and it was risky to count on the standard (since 1974) late rains.

d) How much grain should be distributed to a given village ?

This was perhaps the most difficult matter to resolve in the planning stages. The lack of hard information - reliable statistics - reduced much of the distribution planning to mere guesswork. The O.N.D.R. survey was intended to provide some of the answers. Unfortunately, it contained such glaring inaccuracies that its utility was lessened considerably: the proportionate population of the villages listed was relatively accurate and useful, but the figures themselves were gross overestimates.

e) What kind of seed - millet, upland sorghum, or bottomland sorghum - should be distributed to a given village ?

This too was a somewhat arbitrary decision. Millet, the
/... staple

staple of the Chadian diet, was, of course, the preferred grain. Still, certain villages were known to grow bottom-land sorghum, for example, and others were interested in its production due to its potential for higher yields than millet; others, however, had not been visited by O.N.D.R. extension agents for years and their current agricultural practices were unknown.

As for the distributions beyond the Abeche Rural Sub-Prefecture, priority was given to the most agriculturally productive sub-prefectures in O.N.D.R.'s Geographical Quad-dai sector, Goz-Beida and Am-Dam. Adre and Biltine Sub-Prefectures were also selected. The four sub-prefects concerned were contacted via government radio and were asked to set up several distribution sites within their districts that were centrally located for the local population and that were accessible to heavy transport vehicles.

The storage of the seed in Abeche was a major problem in the seed program. Minor transport losses due to spillage from torn bags had occurred, as expected, and these were noted upon the reception of the seed in Abeche on April 26-27. Unfortunately a little over 1% of the total quantity was stolen, either at the moment of reception or between its reception and the return of the specialist in mid-May. These losses were detected primarily in the main (administrative) warehouse. Inadequate warehouse space was partially to blame for the poor stocking arrangement in the warehouses, the lack of which rendered an accurate physical count extremely difficult.

The crucial concern involving the seed program was that of rainfall. By the end of the reporting period, it was

/... apparent

apparent that the rainy season would be, once again, very bad. False hopes had been raised by some early rain in the latter part of May; some fields were planted, despite the urgings of the O.N.D.R. Chief of Sector over local radio not to do so. The month of June was practically devoid of any rain; the May plantings failed. There was a plentiful rain in the town of Abeche around July 14 signalling the start of what is likely to be a very short rainy season. The millet seed distributed in the area had a maturation period of about two and a half months. Unfortunately, the rainy season in Abeche is unlikely to last until the end of September, as would be required. Prospects, then, are for another bad harvest.

2. Hydrology Activities

Please refer to Section III A.2.

3. Forestry / Ecology Activities

Since the forester/ecologist arrived during the rainy season, only a limited amount of forestry work could be initiated. The numbers and types of projects were restricted by the number and species of trees currently being produced by the Abeche nursery. Over one half of all the seedlings are neem which are useful primarily as shade trees in personal compounds but are rarely requested by villagers as trees to be used in their projects. Villagers tend to prefer local species which are generally more drought resistant and often provide useful by-products such as edible seeds or leaves.

One of the most important and time-consuming aspects of rural forestry is extension work prior to the actual implementation of the project. Thus, for this year, only those
/... projects

projects which had previously been developed by the Water and Forests Service or which required little preparation sociologically were begun. There are, however, 16 W&F agents who are both willing and capable of doing the extension work for the coming year. They would require support from Africare only in their means of transportation, specifically gas for their motorcycles and mopeds. A detailed budget is to be drawn up in consultation with W&F to use ear-marked W&F project funds to best possible use. Gas for these agents will likely be one budget line item.

As with all projects, the effects of any one aspect are not isolated. This is particularly evident with hydrology projects. An increase in the available water supply logically brings an increase in water use. More people come to the area daily and the number of animals brought to water increases. As a result, overgrazing often occurs and the immediate vicinity of the water project can become an environmental disaster. Rather than stopping the advance of the desert, the water project may ironically aid its progress. This forestry program is aimed at, and can be effective in, stabilizing the dunes in such projects, and in developing agroforestry in the surrounding area. But the question of patterns and intensity of use of the water and their effects on the immediate environment must be addressed. There is need to develop coordinated agricultural and livestock management components to the current hydrology/forestry project. Perhaps this issue can be considered when planning any extension to the project.

B. Administrative / Logistics

In terms of logistics, the procurement of a four-wheel drive
/... dump

dump truck, identified in the last quarterly report, is still a high priority. An order has been placed, but there is a lengthy delivery lag.

All of the light vehicles budgeted for the project have been procured, after numerous delays.

The installation of a radio system to link Africare's offices in N'Djamena and in Abeche has been plagued by a series of delays and will not be undertaken for some time further. Nonetheless, this has not hampered the project very much, thanks to the availability of the radio system belonging to Medecins Sans Frontieres (Doctors Without Borders).

V. SUMMARY OF PROJECT STATUS ON JULY 31, 1984

A. Technical

1. Seed Distribution

This program has been successfully completed except for the distribution of a small quantity of bottomland sorghum (bérbéré). This is normally planted only at the end of the rainy season, around mid-September or later. It was thus deemed preferable to distribute the bottomland sorghum as close to the planting season as possible, instead of in May and June. Nonetheless, it was distributed in those areas which were anticipated to be inaccessible in September.

2. Hydrology Activities

Please refer to section III A.2.

3. Forestry / Ecology Activities

The forestry program was well under way, in part due to the excellent work of the W&F staff and the help of the World Food Program. Only the lack of rain has delayed planting in some sites. The next quarter will see the completion of planting

activities and the beginning of preparation for the next season.

B. Administrative / Logistics

The Africare expatriate staff is currently in place and the two technicians in Abeche are planning project activities for the approaching dry season. For the agricultural/construction engineer this entails the recruiting and training of a team of local engineering assistants, as none were available in Abeche upon his arrival. In addition, the Ministry of Agriculture and Rural Development has recently assigned an O.N.D.R. technician, Mr Kadi-Kara, to Abeche, specifically for the project. This step has simply been the latest in a long series of indications of the wholehearted support of the government for the Abeche project. (This support has been evidenced at all levels of government, from the aforementioned ministry to the local officials in Abeche, particularly the Prefet of the Ouaddai and the former O.N.D.R. Chief of Sector).

As for the forester/ecologist, the preparatory phase for the dry season has been quite different since a government counterpart agency with a cadre of technicians, the Water and Forests Service, already exists. The work of the staff at the Abeche nursery prior to the arrival of the forester/ecologist is considered a clear sign of its willingness to function under difficult conditions and of its aptness for further training.

VI PROJECTED ACTIVITIES FOR THE COMING REPORTING PERIOD

A. Technical

1. Seed Distribution

The remaining quantity of bottomland sorghum will be distributed in early September.

/... 2.

2. Hydrology Activities

Please refer to Section III A.2.

3. Forestry/Ecology Activities

Projected activities for the next three months fall under the following headings:

- a) support for existing projects;
 - b) improvements to the Water and Forests Service Office and nursery;
 - c) extension program for the coming season.
- a) Continued support - The projects mentioned in section III will be closely supervised until such time as the seedlings are in the ground, the water retention "diguettes" are completed and some means of protection is assured. By that time the seedlings should be off to a good start and attention can be focused on planning for the next season. In addition to the previously mentioned activities, work will begin in early August on improvements to two existing gum arabic plantations, one between Batouma and Facha, the other near Abougoudam. Both plantations are about 30 hectares each and were planted in 1975. During the war, however, they were left unguarded and many of the trees were cut for fodder by nomadic herdsmen. This year, we will mark off a 5 - 7 hectare section in each plantation. These areas will be surrounded by a thorn fence, inside of which will be planted a live fence-row to protect them from grazing. Water catchment "diguettes" will be constructed at the base of each tree to increase water infiltration. Where necessary, dead gum arabic trees will be replaced by seedlings brought from the Abeche nursery. Time and the experimental nature of some of the techniques used restrict us to only a few hectares

/... of

of improvements this year. It is anticipated to add at least another 10 ha. at each site during the next season. The two gum arabic improvement projects for this year will each employ 25-30 people for one month and 2 guards year-round, all of whom will be paid by Food for Work.

b. Water and Forests Service Improvements:

As mentioned in the project proposal the W&F service has not even the rudimentary equipment necessary to run an office. Priority during the quarter will be given to putting the office back into shape repairing the roofing, windows, providing lighting, furniture and office equipment and supplies. The W&F Service is an integral part of the project and the sooner it can be brought into functioning order, the more assured will be the project's success. In addition to providing support for administration activities of the W&F Service, one of the project goals will be to expand the nursery to supply 70 - 80,000 seedlings for the coming season. We will build a wall around the entire nursery to provide constant protection to the seedlings. The area devoted to seed beds will be tripled. Improvements to the two existing walls will be completed (when weather permits) to provide an estimated $8m^3$ of water/day. An efficient irrigation system will be installed. Though plans for this system have not been finalized, it is hoped that a wind powered pump can be installed which will lift water into a holding tank. (The pump will have a manual back-up system for windless days)

The water will be pumped continuously into the reservoir to be gravity fed through a system of pipes to several spigots interspersed throughout the nursery. The number and propor-

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tion of indigenous species will be significantly increased (as compared to exotics). Fruit tree production will be expanded and an effort will be made to obtain grafted mango starts from N'Djamena.

c) Extension Activities:

From September to October a training program is planned for the 16 W&F agents in Abeche. Accepted planting and nursery techniques will be reviewed. They will also be introduced to new concepts and techniques such as diquettes, anti-erosion contouring, windbreaks and live fencing. A series of extension talks and demonstrations will be developed to be held during the winter with the villagers. Each talk will cover a single reforestation topic and will allow time for assimilation of ideas, discussion of the topic, and discussion of the villagers own perceptions of their forestry problems and needs. With the information gained from these village extension meetings, Africare will work with the W&F agents and with the villagers to develop a coordinated plan of activities for the following six months.

B. Administrative / Logistics

A visit by the Executive Director of Africare, Mr C. Payne Lucas, is scheduled for early October. Abeche has been tentatively included on his itinerary. It is also planned that Ms. Dellaphine Belenda Rauch will arrive in October or November to set up the documentation center in Abeche.

VII BENEFICIARIES

A. Technical

See Section VII of last quarterly report.

VIII MEETINGS HELD, SITE VISITS, SPECIFIC ACTIVITIES OF AFRICARE U.S. HIRE STAFF

A. Technical

1. Seed Distribution

The specialist remained in Abeche from May 14 to June 25, 1984, to supervise the distribution phase and he was present at each distribution within the Abeche Rural Sub-Prefecture (See Annex No. 3 for the schedule). These distributions were planned and executed conjointly by the specialist and by the O.N.D.R. Chief of Sector, Mr Aberamane; the Prefect, the officials of the rural sub-prefecture, and the cantonal chiefs were all consulted on the program.

2. Hydrology Activities

The permanent agricultural/construction engineer, Mr Etienne, arrived in Abeche on May 11, where there was a brief transition of three days with his predecessor.

Inspection visits to the various work sites were made on a daily basis by Mr Etienne over the next few weeks. Since work had already gone beyond the preliminary stages at most sites, only minor technical advice could be given and only minor improvements could be made. The Dougouri work site was given special attention because of the scale of the work and its importance (Dougouri services a larger immediate community than the other sites). Nonetheless, the sites were visited continuously throughout the reporting period.

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3. Forestry/Ecology Activities

Ms. Huso arrived in Abeche on July 9, 1984. Her settling-in period included introductory visits to local officials and initial contacts with her governmental counterpart agency, Water and Forests.

B. Administrative

The Country Representative visited Abeche from ^{May} 14-18, 1984, in part, to continue Mr Etienne's orientation and to evaluate the project's status. Upon his return to N'Djamena he assumed the duties of the Logistics Supervisor (who was doubling as the Seed Distribution Specialist and who was devoting his full energies to the seed program) for the next six weeks, with the help of the Assistant Logistics Supervisor, Ms. Asma Khalid, until the expiration of her contract on June 19.

IX PROPOSED PROJECT/BUDGET AMENDMENTS

None.

BUDGET: COST ELEMENT		BALANCE AT BEGINNING OF REPORTING PERIOD	AFRICARE LINE ITEMS		LOCAL EXPENDITURES				BALANCE AT END OF REPORTING PERIOD
DESCRIPTION	AMOUNT(\$)		N°	DESCRIPTION	MONTH MAY (\$ 1.00=418.8 CFA)	MONTH JUNE (\$ 1.00=428.82 CFA)	MONTH JULY (\$ 1.00=447 CFA)	TOTAL(\$)	
SALARY	477,951	475,070	02	LOCAL HIRE	2,086	1,273	784	4,143	
			06	TEMP. EMPLOYEES	86	28	46	160	
								4,303	
FRINGE AND OTHER PERSONNEL COSTS	105,805	105,732	11-20	FRINGE BENEFITS	20	Ø	Ø	20	105,772
TRAVEL, HOUSING AND RELOCATION	466,965	458,517	29	HOUSEHOLD FURNISHINGS	21	3,157	2,038	5,276	
			30	HOUSING MAINTENANCE AND REPAIRS	25	Ø	170	195	
			31	HOUSING RENTAL	Ø	Ø	380	380	
			32	GENERAL TRAVEL	27,579	1,215	2,764	31,558	
			33	PER DIEM	724	735	1,262	2,721	
			34	VEHICLE REPAIR AND SERVICE	4,372	1,765	192	6,329	
			37	INTERNATIONAL TRAVEL	Ø	Ø	Ø	Ø	
			38	INTERNATIONAL SUBSISTENCE	Ø	255	Ø	255	
							51,037	SUB-407,280 TOTAL	

EQUIPMENT	465,500	457,561	40	FORESTRY EQUIPMENT	Ø	77	145	222	
			41	HYDROLOGY EQUIPMENT	335	Ø	Ø	335	
			42	OFFICE/ABECHE	Ø	1,632	Ø	1,632	
			46	TECHNICIANS' TOOLS	7	Ø	Ø	7	
			48	DUMP TRUCK	Ø	35,078	Ø	35,078	
			49	LIGHT TRUCKS	13,675	26,802	425	40,902	
			51	MOTORCYCLES	Ø	Ø	112	112	
			52	OFFICE EQUIPMENT	2,239	289	68	2,596	
			53	OFFICE FURNISHINGS	219	799	776	1,794	
			54	EQUIPMENT REPAIR/ SERVICE/ RENTAL	320	27	338	685	
			55	TRUCK RENTAL	Ø	Ø	507	507	
								83,870	

BUSINESS/OTHER DIRECT COST	249,346	221,428	84	FREIGHT ON COMMO- DITIES	31,923	42	6,630	38,595	
			85	INSURANCE	371	766	Ø	1,137	
			89	TELEPHONE AND TELEX	138	117	84	339	
			90	POSTAGE	42	34	21	97	
			93	OFFICE RENTAL	239	2,798	Ø/	3,037	
			94	OFFICE MAINTENANCE/ OPERATIONS	Ø	Ø	945	945	
			97	OTHER DIRECT COST	Ø	Ø	Ø	Ø	
INDIRECT LEVEL I (21.45 %)	289,268	NO LOCAL EXPEN- DITURES	-	-	-	-	-	-	
INDIRECT LEVEL II (10.7 %)	117,165	NO LOCAL EXPEN- DITURES	-	-	-	-	-	-	
TOTAL	2,850,000	2,596,483			94,863	82,237	34,017.67	211,117.67	

→ N.B. These expenditures along with the necessary supporting documentation (invoices, receipts, etc.) have been submitted in monthly financial reports to Africare Headquarters. The quarterly financial report, A.I.D. Form 269, will be prepared by Africare Headquarters. Form 269 is, of course, the official reporting document to U.S.A.I.D. on the financial status of this project and, in case of any minor discrepancy with this document, is considered binding. This document is only intended to serve as an interim report. The monthly exchange rates used in this document have been determined by Africare Headquarters.