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F I N A L R E P O R T
USAID/CHAD
DESERT LOCUST CONTROL PROGRAM
1988

DECEMBER 15, 1988

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I. INTRODUCTION

The favorable rains following the 1984 drought have led to the rapid multiplication of various agricultural pests. In Chad, as well as in other subsaharan countries, the Locust/Grasshopper emergency control program has now continued for the third consecutive year. In 1986 and 87 the Oedaleus Senegalensis grasshopper threatened agricultural crops across the Sahelian zone of Chad, but timely and effective aerial application of pesticides have resulted in a much reduced problem in 1988. The problem of Schistocerca Gregaria or Desert Locust began its rapid development in the latter half of the 1987 agricultural season in the northern fringes of the Sahelian zone of Eastern Chad. By November 1987 a large population of locusts migrated to North Africa where, despite intensive control efforts, it grew even larger. These locusts then descended upon the subsaharan countries in May of 1988.

Through its bilateral program with the Government of Chad, USAID provided the aerial services of a survey helicopter, 30,000 liters of pesticide, and other miscellaneous support items as part of an international donor effort aimed of protecting crops from locusts and reducing their population. USAID through FAO and directly through OFDA also provided additional aircraft for survey and aerial application of pesticides. USAID/Chad estimated the total U.S. Government contribution at \$963,000 million as compared to the estimated total of \$2,000,000 from all other donors and the Government of Chad.

The unusually heavy rains this year prevented the locust population in Chad from developing to the expected catastrophic levels and, as a result, the USAID efforts concentrated on extensive survey and monitoring of the locust situation. Other donors and the GOC treated not much more than 100,000 hectares between May and December.

II. SEASON'S CHARACTERISTICS

2.1 Rain Pattern

The rains began in the northern half of the Sahelian zone in late June which was excellent for the timely planting of cereal crops in the area. Fortunately for farmers, the rains continued to fall in abundant well-spaced patterns through mid October.

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All six prefectures in the Sahelian zone reported rainfall equal to or even above the 30 year average. The Subprefecture of Abeche in Eastern Chad, where much of the early May and June migration of locust concentrated, reported 23% above average rainfall.

2.2 Crop Development

Chad is predicting a record-breaking cereal crop this year. Extensive areas in the northern fringes of the Sahelian zone which have had negligible production for several years were planted and exhibited high yields.

Some areas, in fact, received too much rain and crops in low-lying areas were lost to floods. However, these losses were more than offset by the extensive planting on higher grounds.

Based on agricultural statistics provided by the Ministry of Agriculture, USAID/Chad believes cereal crop lost to locust damage was about 2% of the total production of the affected Prefectures. The total value of the crop loss is estimated at \$1,107,000. Total crop saved by the application of pesticides cannot be justly estimated due to lack of basic data and information.

2.3 The Grasshopper Situation

The grasshopper population, as expected, did not develop this year as they had in 1986 and 87 and, thus, did not threaten crops. The timely and effective aerial application of pesticides in and around the major agricultural areas of the Sahelian Zone by USAID/Chad in 1987 contributed significantly in reducing late-season grasshopper population which would have laid vast numbers of egg which, in turn, would have hatched by the on set of this year's rains.

USAID/Chad financed and organized a grasshopper egg pod survey in February. The results of this survey clearly showed a marked reduction of egg pods in those areas sprayed aeriually by USAID/Chad. In addition, for those egg pods which were laid, the survey found high levels of parasites destroying the eggs at a rapid pace. Thus, USAID/Chad concluded that for the 1988 agricultural season, it would not have to address any grasshopper problems and could concentrate its efforts on locust control.

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2.4 The Desert Locust Situation

Just as the experts predicted in late 1987 and early 1988, massive numbers of desert locust swarms descended upon the Sahelian zone of Chad, as well as other subsaharan countries. They were first sighted in western Chad's Kanem Prefecture on May 27. However, the swarms continued their migration in an easterly direction as there was very little green vegetation to feed on in the Kanem at that time. By the time the swarms reached the Ouaddai in Eastern Chad in late June and early July, the rains had created a favorable habitat for breeding and survival.

Nearly 100 sightings had been reported by early July by Crop Protection Service agents, agricultural extension agents, other government officials, and various voluntary organizations. Sightings of dense swarms were reported very regularly in mid July over the town of Abeche. Extensive crop damage was also being reported, but fortunately, farmers were able to replant as it was still early in the season and the rains continued through mid October which allowed for proper development and maturation of the replanted crops.

Towards the end of August, the locust population quickly diminished. This phenomenon puzzled locust experts who attributed the near disappearance of the locust to heavy rains which may have destroyed egg fields and created too humid an environment for the adult locusts which may have migrated to dryer areas and dispersed throughout the northern desert of Chad and North Darfur in Western Sudan.

It is also important to note that early-season aerial spraying by French FAC aircraft (25,000 hectares), Crop Protection Service ground control teams, and villagers' traditional control methods may have had an effect on the rapid reduction in locust population.

The locust situation was basically stabilized throughout the Sahelian zone for several weeks up until the latter half of October when the locust problem flared up once again in the Kanem Prefecture of Western Chad. The problem quickly died down to manageable levels and aerial control was not warranted.

Now, some radio messages continue to come in from Crop Protection Service agents which are still in the field and report sightings of solitary locust populations still in.

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Chad. In a few cases, swarmlets of solitary mature adults have been reported. The locust experts predict that these solitary locust will remain in Chad over the dry season and will begin to breed with the on set of rains in May along the southern fringes of the Sahelian zone and gregarious swarms may develop in the heart of Chad's cereal belt by late June.

III. SUPPORT ACTIVITIES

3.1 Satellite Imagery

OFDA funded the procurement and delivery of vegetation index satellite imagery (Greenness Maps) every two weeks for the duration of this agricultural season. Imagery provided in 1987 proved to be a useful tool for identification of the most favorable habitats for locust breeding in Chad. Thus, the imagery was also provided for the 1988 program.

On July 04, two specialists from the EROS Data Center in South Dakota came to Chad and trained 12 technicians from various GOC offices on how to read and use the greenness maps. The imagery was received regularly by USAID/Chad which, in turn, distributed copies to those GOC agencies which were contributing to the locust control program and whose technicians had been trained.

Due to the nature of the emergency program and the need to act fast in the transmission of the information from the imagery, USAID/Chad staff analyzed, and interpreted the imagery as soon as it received it and prepared the information for radio transmission to field teams.

This enabled the rapid and thorough survey of all areas which could have harbored locusts. Much time and money would have been lost in random surveys had the satellite imagery not been available.

3.2 Fuel and Pesticide Prepositioning

Unused diesel fuel and malathion from the 1987 Grasshopper Control Program were prudently prepositioned in a strategic location (Abeche) in the event the pest problem developed in 1988. A small warehouse was built at the end of 1987 where 20,000 liters of malathion and 80,000 liters of diesel fuel were safely stored. Thus, this fuel and pesticide were available for the locust control program in 1988.

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USAID/Chad also prepositioned one large truck and two pick-up trucks in Abeche for support of the operation. The trucks would not have reached Abeche had they not been sent prior to the start of the rainy season.

30,000 liters of malathion which were shipped and delivered to Chad after the onset of the rainy season took two months for overland delivery from N'Djamena to Abeche. It could have been delivered within ten days had it been shipped earlier. Fortunately, the pesticide was not needed this year.

3.3 Field Messages

USAID/Chad staff trained a member of the Crop Protection Service Staff in interpretation of radio messages reporting on locust sighting and control efforts, logging the information in a computer and issuing weekly reports summarizing the development of the locust problem. These reports were used extensively by the Director of the Crop Protection Service, Minister of Agriculture, FAO, and other donors.

IV. USAID AERIAL OPERATION

4.1 Background

Responding to the assessments of locust experts after the 1987 campaign and to recommendation made at the A.I.D conference held at Harpers Ferry, Virginia in January 1988, USAID/Chad on January 29, 1988 submitted to AID/W a proposal for an emergency locust control program in Chad. The proposal included USAID/Chad's strategy for the program as well as a request for \$970,000 to fund technical assistance, aerial services, pesticide, support costs, and satellite imagery,; thus, a vertically integrated program which ensured the availability of all the required inputs for its success. The proposed program was part of an international donors' effort to address the expected locust infestation.

The proposal was finally approved on July 07, 1988 after the U.S. Ambassador officially declared a disaster on July 06. Funding citation for the aerial services and in-country transportation of pesticides was received on July 08. Pesticides, technical assistance and satellite imagery were to be provided in-kind directly from AID/W. Delivery of 30,000 liters of pesticides to N'Djamena started July 26 and was completed August 03. The satellite imagery was delivered regularly over the season. The technical assistance in

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entomology was not provided.

4.2. Objectives

Aerial survey/spraying was determined by USAID/Chad to be the most effective means of dealing with the problem since the infestations were expected to be widespread and many areas are inaccessible by road during the rainy season.

The primary objectives of the USAID locust control program were to both identify and spray areas of major locust infestations in Eastern Chad to protect agricultural crops and reduce locust populations in the region.

The main components of the USAID locust control operation were:

- 1) to assist the CPS in the survey, identification and treatment of areas infested with desert locusts that could not be effectively reached by GOC ground control teams or village brigades;
- 2) to plan and implement in conjunction with the CPS, the Technical Committee, and other donors the locust control program in the Ouaddai, Biltine and B.E.T. Prefectures;
- 3) to supplement, but not duplicate or replace, the locust control program of the CPS or other donors whenever necessary;
- 4) to provide technical assistance and logistical support to the CPS and other donor organizations, wherever feasible.

4.3 Implementation

As the locust swarms continued to pour in from North Africa, it seemed that available resources and donor pledges may need a backup to control the problem. USAID/Chad then accepted the services of two Ayers Turbo Thrush aircraft

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which were made available from USAID/Morocco to supplement the Chad control effort. USAID/Chad also contracted for an Alouette II helicopter equipped with spray gear and its ground support equipment and staff under its program originally approved by AID/W.

4.3.1 Turbo Thrush Aircraft

AID/W informed USAID/Chad in July 1988 that it was making available two Turbo Thrush spray aircraft, under contract through OFDA that were being used in the locust control program in Morocco. Since the summer months were the down time for locust spraying in Morocco, the aircraft were made available until the beginning of October 1988 when locust spraying was scheduled to start up again in Morocco.

4.3.1.1 Delays in Arrival in Chad

The Turbo Thrush spray planes were scheduled for maintenance in Dakar, Senegal before ferrying across Mali, Burkina Faso and Niger on their way to Ndjamena. Unfortunately, maintenance services of the two planes took longer than the originally scheduled 7 days.

The pilots decided to remain in Bamako and not continue to Chad because they had been told by someone in Bamako that the security situation would pose a threat to them if they were to fly in Chad. There was no security problem in Chad and the story they were told was unfounded. The pilots insisted its home office contact the Department of State in Washington to get final clearance for them to continue to Chad. Needless to say, this caused an additional delay of 2-3 days. When they reached Niamey, the pilots failed to properly secure the wings of one of the aircraft when it was parked overnight and a windstorm that night damaged one of the wings. This caused a full week's delay. Due to these setbacks, the first plane did not arrive in Chad until August 12th and the second plane arrived on August 23rd. Effective time was lost due to these delays, and the planes did not reach Abeche until August 25th. After their arrival in Abeche the Turbo Thrushes were readied with their spray gear and were operational on August 26th.

Interestingly enough, the aircraft were demobilized in one day after USAID requested they return to N'Djamena from

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Abeche; and took them three days to return to Dakar. The pilots even wanted to depart Chad without confirmation of overflight clearances from countries on route which was just the opposite approach which they took in coming to Chad.

4.2.1.2. Lack of Major Locust Targets

The Turbo Thrush team (2 pilots, 1 mechanic, 1 logistician) was based in Abeche from August 25 to September 10, 1988. During that time, no major infestations were identified in the Ouaddai or Biltine Prefectures that would warrant the use of the high capacity spraying capabilities of the Turbo Thrush spray planes. The situation never really developed as anticipated by all the locust experts, entomologist reports and reports from the Chadian CPS teams. The possible reasons for this are thought to be several:

- 1) Unusually heavy rainfall far exceeding the norms for the region was prevalent throughout Chad and most of the Sahel. For example, in Abeche rainfall was exceptional with 27 days of rain in late May, June & July totaling 184.8 mm, 21 days of rain in August totaling 288.5 mm. and 8 days in September totaling 37.9 mm. In contrast the total rainfall in Abeche in 1987 was 144.8 mm, and the 30 year average is 414.5 mm.

Therefore desert locust egg pods that should have hatched in July and August were probably inundated and drowned, covered too deeply by soil and sand due to heavy soil erosion, or were washed to the surface and dried out. It is quite possible that any or all of these circumstances arose to significantly decrease the locust population. Also, newly hatched larval bands (2nd & 3rd instars) may have drowned in the wadis during heavy rainfalls.

- 2) The efforts of the village brigades and traditional control measures may have had more impact on reducing the larval bands than was recognized. For example, in the Guereda province the extension agent and the sous-prefet both cited the significant level of effort of 200 village brigades using backpack sprayers, under limited supervision

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by CPS agents, in June and July 1988. It is quite possible that these actions helped keep the locust population in check. In other areas, the traditional method of herding larval bands into deep trenches and then burying them was witnessed. Tens of thousands of larvae were killed in a matter of minutes utilizing this method and controlled the problem in that particular area.

- 3) Lack of adequate information was a significant problem in the Ouaddai and Biltine provinces. Since the transmission of information relied heavily on CPS radio messages and sightings by villagers, there is some possibility that remote areas that had large locust infestations may not have been located. Most vehicular transportation was cut off due to the heavy rains in July and August and CPS vehicles were limited to surveying and treating only along major routes that were passable at the time.

We must note, however, that neither the French FAC nor the USAID helicopters were able to find anything other than a few scattered locust even after extensive survey of the area.

- 4) Much of the reporting of locusts in the Ouaddai and Biltine provinces was not quantified or verified. Many sightings did not give adequate indicators of the extent of the infestation. Information on the density, surface area and stage of development of the locust population was often lacking or erratic. Radio reports of the CPS often relied on villagers' information or other second and third hand sources. Without an entomologist or locust expert in the field to verify the reports it was difficult to ascertain the level of infestation in the area.
- 5) The larvae may have fledged and flown to Sudan or scattered in the northern desert of Chad. Here again, we must note that extensive aerial survey in Chad did not identify more than a very few swarms.

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One of the Turbo Thrushes did spray about 600 hectares in five different patches east of Iriba and Guereda in the Biltine Prefecture on September 9th. This was due to the fact the FAC Pawnee spray plane could not reach the area due to the long distance involved.

4.3.1.3. Fuel Ferrying by Turbo Thrushes

Since there was a lack of major targets to warrant the use of Turbo Thrushes as spray aircraft, USAID requested they be used to ferry fuel for the FAC survey helicopter and the Pawnee spray plane. Both French aircraft had a limited range and could not operate over very long distances without having to preposition fuel in various locations. Since most of the roads in the Ouaddai and Biltine were impassable during the rainy season, the Turbo Thrushes were used to ferry fuel to Biltine, Iriba and Guereda. Fuel which was carried in the Turbo Thrushes' hopper was then deposited in empty drums in each of these locations to enable more widespread coverage of the area.

Without the assistance of the USAID Turbo Thrushes the FAC plane and helicopter could not have surveyed as extensive an area and sprayed 25,000 hectares in the Ouaddai and Biltine. The use of the Turbo Thrushes to ferry fuel in the region was therefore a very significant factor in the overall locust control campaign in August and September.

The Turbo Thrushes finally left Abeche on September 10, 1988 and left Chad on September 15 to return to Morocco.

4.3.2. Helicopter

In August 1988 USAID/Chad negotiated a contract for the services of an Allouette II helicopter equipped with Micronair spray gear to assist in the survey and spraying operation in Eastern Chad. The helicopter and team consisting of a pilot, mechanic and logistician/coordinator arrived in N'Djamena on September 02, 1988.

4.3.2.1 Delay Due to Personnel Changes

Shortly after the helicopter team's arrival in Chad the coordinator for the team became ill and requested to return to France. The mechanic for the team received word of a personal family situation that he needed to attend to in France

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and he also left Chad. There were therefore delays at the beginning of the contract due to the wait for replacement personnel from France. Finally on September 14th the helicopter crew departed N'Djamena and began its survey work. This delay had no adverse affect on the program as the locust population never developed to the expected catastrophic levels.

4.3.2.2. Program Change

At the request of the Minister of Agriculture, the USAID helicopter stopped in Ati on November 14 to conduct a survey of the area around Djedaa (1331N-1834E) where supposedly a large infestation had developed. The helicopter surveyed this area on September 14 and 15 (about 4 hours) and found no sign of locusts in the area. The helicopter continued on to Abeche on September 15 and after completing necessary logistical arrangements there, it flew on to Kalait on September 18.

4.3.2.3. Survey of the 16th parallel

Due to the heavy rainfall this year it was suggested by the locust experts that perhaps the locusts had moved further north where it was a bit drier. Therefore, the USAID helicopter was scheduled to begin the survey of the 16th and 17th parallel since up until that time no donor or CPS team had conducted a survey of those latitudes, and the extent of any locust infestation in that remote, sparsely populated area was largely unknown. The helicopter established its base camp in Kalait (1550N-2054E) on September 18.

The survey of the 16th parallel was started on September 19 and was completed on October 14. Results of the survey indicated there was no locust infestations and very few isolated swarms were passing through in west and northwest directions. The helicopter surveyed intensively the area between 1420N and 1630N latitude and between 1900E longitude and the Chad-Sudan border.

The visit of the PRIFAS locust experts to Kalait the week of October 9th to participate in the survey of the 16th parallel confirmed that current vegetative and soil humidity status was not conducive to locust oviposition in Eastern and Central Chad. Given this situation, USAID/Chad decided to move the base camp from Kalait on October 15 and

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establish a base camp in Guereda (1430N-2210E) to monitor reports of desert locust swarms coming in from Sudan.

4.3.2.4. Survey of the Guereda Area

The helicopter was based in Guereda from October 15 through October 18. However, high winds averaging 25-50 km/hour each day precluded the possibility of doing aerial spraying with the helicopter. Dropping temperatures also kept locust swarms originating in Sudan from staying very long in the Guereda area.

4.3.2.5. Village Brigades

A USDA/USAID field staff meeting with the Guereda Sous-prefet and the Agricultural Extension Service Sector Chief on October 17 found that about 200 village brigades of about 20 persons each mounted an extensive campaign in the area using backpack sprayers against larval bands in July/August 1988. Some of these brigades had received training from CPS and provided with limited supervision in the application of pesticides. They were quite proud of the work that they had done and were sure that it had a significant impact on decreasing the locust population in the prefecture. They did however cite the need for additional protective clothing (i.e. boots, gloves, etc.) for the pesticide handlers. There was also mention of the extensive use of the traditional control techniques in which the larvae are buried in ditches.

4.3.2.6. Demobilization from Guereda

Given the conditions in Guereda the decision was made to demobilize from Guereda on October 18 and put the helicopter team on standby in N'Djamena awaiting further instructions. The helicopter arrived in N'Djamena on October 20.

4.3.2.7. Provision of Helicopter to Mauritania

After discussions with the CPS Director and the Technical Committee it was determined that there was no further need for the services of the Alouette II helicopter in Chad. The Director agreed to provide the helicopter to any other Sahelian country that may have a need in their locust control campaign this year.

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On October 24 USAID/Chad proceeded to contact the Desert Locust Task Force in Washington to ascertain which USAID mission might have the greatest need for the services of a survey/spray helicopter. On October 25 Mauritania was identified as the country with the greatest need for these services and legal and logistical arrangements were made to get the helicopter on its way as soon as possible. Fortunately the USAID Regional Contracting Officer was in N'Djamena at the time and he assisted in the contract amendment to add Mauritania as a site of operation. The contract amendment was completed on October 29. The helicopter left Chad on October 31 and arrived in Mauritania on November 08.

4.4 End of the Locust Control Program

By mid December 1988, the USAID/Chad Locust Control Program completed all of its activities. Surplus fuel, malathion, and camp construction materials are stored in the USAID warehouse in Abeche. Camping gear, generators, and other equipment is stored in the USAID warehouse in N'Djamena.

V. LESSONS LEARNED

5.1 Funds should be made available early in the season to enable timely contracting for services and procurement of commodities.

5.2 Consider other alternative for emergency pest control programs. i.e. Provide Title II cereals to cover crop losses.

5.3 If an emergency program is launched, ensure it is vertically integrated. All essential elements/inputs must be guaranteed if the program is to be a complete success. This was noted in USAID/Chad's 01/31/88 proposal to AID/W.

5.4 Although the USAID emergency program did not participate in areas where locust control activities were using unsafe and unauthorized pesticides, it did note some problems which demonstrate that pesticides are not handled properly when given to farmers for locust control. A field visit to USAID funded irrigation projects near Lake Chad (not associated with Locust Control Program) revealed that lindane was distributed by the Crop Protection agent through the local agricultural extension service to farmers for locust control. The pesticide was used by the farmers to control other pests on vegetable crops which are sold for cash in urban areas.

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The lesson to be learned here is that farmers are not prepared to use pesticides for locust control. Secondly, highly toxic pesticides should have very strict control by the GOC and the donor agency.

5.5 Farmers in Eastern Chad were found to be very active in control of larval bands by using traditional techniques.

DRAFT: USDA/GGarbinsky & ADO:KFuller *[Signature]*

CLEARANCES: AID/REP:BDWilder *[Signature]*
DPDI:CKassebaum *[Signature]*
CONT:KLeBlanc *[Signature]*

ANNEX A

USAID/CHAD'S 1988 STRATEGY & PROGRAM PROPOSAL
(N'Djamena telegram 782 of January 29, 1988)

VZCZCCNA *
PP RUEHC RUFERO RUEHAB RUEHYD
DE RUTAND #0782/01 041 **
ZNR UUUUU ZZH
P 100947Z FEB 88
FM AMEMBASSY NDJAMENA
TO RUEHC / SECSTATE WASHDC PRIORITY 9133
RUFERO / AMEMBASSY ROME PRIORITY 1374
INFO RUEHAB / AMEMBASSY ABIDJAN 5645
RUEHYD / AMEMBASSY YAOUNDE 4328
BT

CLASS: UNCLASSIFIED
CHRG: AID 01/29/88
APPRV: AID/REP:BDWILDT
DRFTD: ADO:KFULLER
CLEAR: 1. PO:CKASSEBAUM
CONT:KLEBLANC
TOMASI
DISTR: AID3 AMB DCM
CHRON

UNCLAS SECTION 01 OF * NDJAMENA 00782

AIDAC

STATE PASS TO AF/C, AF/EPS AND EB
AID/W FOR AFR/SWA AND AFR/TR
ROME FOR FODAG
ABIDJAN FOR PEDSO PASS RLA
YAOUNDE FOR CONTRACTING OFFICER

E.O. 12356: N/A
TAGS: EAID, CD
SUBJECT: CHAD 1988 NEEDS FOR CONTROL OF DESERT LOCUST

REF: NDJAMENA 461

NDJ FILE CODE: PROJECT 677-0056 - OUT GOING CABLES

1) END OF SEASON EVALUATION BY FAO TEAM COMPOSED OF MAURICE BALMAT (FAO), H. VAN DER VALK (NETHERLANDS), AND CARL CASTLETON (AID) CONCLUDES THAT THE INTERVENTIONS FOR GRASSHOPPER CONTROL IN CHAD WERE EFFECTIVE IN LIMITING CROP LOSSES AND REDUCED THE GRASSHOPPERS' REPRODUCTIVE POTENTIAL IN THE NEXT CAMPAIGN. THE REPORT FURTHER STATES THAT THE GRASSHOPPER POPULATION LEVEL IN THE SAHELIAN ZONE SEEMS TO BE RETURNING TO NORMAL...WITH POPULATIONS FALLING, PARASITISM GROWING, AND BECAUSE OF THE EFFICIENCY OF THE CONTROL CAMPAIGN. WITH THE EXCEPTION OF NORTHERN CHARI BAGUIRMI AND EASTERN LAC PREFECTURES WHERE END-OF-SEASON AERIAL TREATMENT WAS VERY LIMITED, MISSION IS IN AGREEMENT WITH THE FAO CONCLUSIONS THAT GRASSHOPPER POPULATIONS IN THE SAHELIAN ZONE WILL PROBABLY BE MUCH MORE REDUCED THAN THOSE OF 1986 & 87. MISSION AND FRENCH FAC NOW JOINTLY FUNDING A GRASSHOPPER EGG-POD SURVEY ACROSS THE SAHELIAN ZONE TO MAKE A FINAL DETERMINATION ON WHAT MAY BE EXPECTED IN 1988.

THE FAO EVALUATION REPORT STATES THAT: "INTENSE ACTIVITY BY SCHISTOCERCA GREGARIA IN CHAD MUST BE EXPECTED NEXT YEAR, OF THE LEVEL GREATER THAN IN ALL THE CAMPAIGNS UNDERTAKEN IN THE SAHEL IN MORE THAN 25 YEARS. IT IS THEREFORE MOST IMPORTANT TO GIVE CHAD THE... MEANS ... NECESSARY TO FACE UP TO THIS NEW PROBLEM." BECAUSE OF THE GREGARIOUS BREEDING IN 1987, IT APPEARS OBVIOUS THAT THE SERVICE (CROP PROTECTION SERVICE) WILL HAVE TO DEAL WITH THE GREAT, AND EVEN MORE PRESSING PROBLEM OF THE

DESERT LOCUST NEXT YEAR."

PRIFAS SAS (ACRIDIAN SURVEILLANCE IN THE SAHEL) REPORTS ALSO NOTE THE HEAVY POPULATIONS OF DESERT LOCUST THAT BUILT UP DURING THE 1987 SEASON AND THE IMPORTANCE OF CONTROLLING THEM IN 1988 TO REDUCE THE RISK OF GENERALIZED INVASION ACROSS OTHER SUBSAHARAN AND NORTH AFRICAN COUNTRIES.

MISSION BELIEVES THAT BOTE THE FAO STATEMENT AND THE PRIFAS REPORTS ARE CORRECT. IN A JOINT FIELD ASSESSMENT OF THE DESERT LOCUST PROBLEM IN SEPTEMBER 1987 BY DR. GEORGE POPOV, DR. TAHAR RACHADI (PRIFAS), CARL CASTLETON, AND HABIB KHOURY (USAID/CHAD ENTOMOLOGIST) FOUND THAT THE AREA APPROXIMATELY WITHIN 15 & 17 DEGREES NORTH AND 20 & 23 DEGREES EAST HAD DEVELOPED INTO A VERY FAVORABLE BREEDING HABITAT FOR DESERT LOCUST. EXTENSIVE EGG LAYING WAS REPORTED BY CROP PROTECTION AND OCLALAV TEAMS WORKING IN THIS AREA DURING THE 1987 DESERT LOCUST CONTROL PROGRAM. PLEASE REFER TO RADIO MESSAGE RECORDS INCLUDED IN THE USAID/CHAD FINAL REPORT OF THE 1987 GRASSEPPER CONTROL PROGRAM COPIES OF WHICH HAVE BEEN PASSED TO OFDA, AFR/TR/ARD, AND AFR/SWA.

2. IN JANUARY 05 DONOR COORDINATION MEETING, GOC CROP PROTECTION SERVICE REQUESTED INTERNATIONAL DONOR ASSISTANCE FOR CONTROL OF BOTH DESERT LOCUST AND GRASSEOPPERS. IN SEPARATE MEETING OF JANUARY 28, DIRECTOR OF AGRICULTURE TOLD USAID/CHAD THAT ALTHOUGH MUCH ASSISTANCE IS NEEDED TO ENSURE THAT THE GRASSHOPPER PROBLEM IS KEPT UNDER CONTROL IN 1988, THE MINISTRY OF AGRICULTURE IS PARTICULARLY CONCERNED WITH THE DESERT LOCUST SITUATION. A LIST OF GOC NEEDS FOR GRASSHOPPER (SEE REFTTEL) AND DESERT LOCUST CONTROL (SEE FOLLOWING PARAS 4 & 5) WAS PROVIDED TO USAID/CHAD BY THE CROP PROTECTION SERVICE. PRELIMINARY DONOR REACTION TO THE CROP PROTECTION SERVICE REQUEST HAS BEEN SLOW PARTICULARLY FOR THE PROVISION OF SUPPORT FOR ACTUAL CONTROL EFFORTS. FRENCH FAC AND SWISS AIDE HAVE EXPRESSED AN INTEREST IN SUPPORTING TRAINING COMPONENTS, JAPAN HAS PLEDGED AN UNSPECIFIED AMOUNT OF PESTICIDE FOR DESERT LOCUST CONTROL, AND FAO IS REVIEWING THE POSSIBILITY OF ESTABLISHING THE PHYSICAL INFRASTRUCTURE FOR A DESERT LOCUST CONTROL CENTER IN CHAD WITH ITS HEADQUARTERS IN N'DJAMENA AND A FIELD OFFICE IN FADA. IN ADDITION, A TEAM COMPOSED OF THE DUTCH, FAO, AND UNDP REPRESENTATIVES ARE SCHEDULED TO TRAVEL TO CEAD BY END OF FEBRUARY TO REVIEW THE FEASIBILITY OF NEAR FUTURE FUNDING OF A LONG-TERM PROJECT TO ASSIST THE CROP PROTECTION SERVICE DEVELOP ITS CAPABILITIES TO ADDRESS THE PEST PROBLEMS OF THE AGRICULTURAL SECTOR.

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STATE PASS TO AF/C, AF/IPS AND EB
AID/W FOR AFR/SWA AND AFR/TR
ROME FOR FODAG
ABIDJAN FOR REDSO PASS RLA
YAOUNDE FOR CONTRACTING OFFICER

E.O. 12356: N/A
TAGS: EAID, CD
SUBJECT: CHAD 1988 NEEDS FOR CONTROL OF DESERT LOCUST

3. THE CROP PROTECTION SERVICE WITH THE ASSISTANCE OF AN FAO CONSULTANT HAS ESTIMATED THAT 200,000 HECTARES WILL NEED TO BE TREATED FOR CONTROL OF DESERT LOCUST INFESTATIONS IN 1988. MINIMUM REQUIREMENTS AS PRESENTED BY THE DIRECTOR OF THE CROP PROTECTION SERVICE ARE AS FOLLOWS (THE COST ESTIMATED BY USAID/CHAD):

1) PESTICIDES:

PROPOXUR 2 PERCENT DUST FOR 1988 ONLY
- 400MT.....DOLS 280,000

FENITECTHION 50 PERCENT FOR 1988 ONLY
- 140,000 LITERS.....840,000

2) AERIAL TREATMENT (250 HOURS).....400,000

3) EQUIPMENT:

EXHAUST NOZZLE SPRAYERS
- 10 UNITS..... 80,000

PROTECTIVE GEAR
- 500 SETS..... 1,000

HF RADIOS
- 13 UNITS..... 25,000

GENERATOR (FOR FADA STATION)
- 1 UNITS..... 2,000

REFRIGERATOR (FOR FADA STATION)
- 1 UNITS..... 2,000

CAMPING GEAR (INCLUDING TENTS, COTS, TOOLS,
- FUEL DRUMS, FIRST AIDE KITS ETC)
- 10 SETS..... 5,000

SURVEY EQUIPMENT (INCLUDING MAPS, COMPASSES,
- COLLECTION BOXES, CAMERAS,
- SIGNAL MIRRORS, ETC.) 10,000

4) VEHICLES:

- 1 EA 20-TON TRUCK..... 50,000
- 4 EA UNIMOGS..... 150,000
- 4 EA 4X4 PICK-UP TRUCKS..... 100,000

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5) CONSTRUCTION:

- FADA & N'DJAMENA LOCUST
- CONTROL OFFICES.....:350,000
- 4 WAREHOUSES..... 40,000

6) OPERATING COSTS FOR 1988 (INCLUDING

- VEHICLE REPAIR FUEL,
- PERDIEM, OFFICE

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- SUPPLIES, ETC.).....200,000

7) TRAINING (INCLUDING IN-COUNTRY
 - AND OUTSIDE).....65,000

8) CONTINGENCY (10 PERCENT)..... 260,000

9) TOTAL GOC NEEDS FOR LOCUST CONTROL...2,860,000

4. CROP PROTECTION SERVICE ESTIMATES THAT ABOUT 375,000 HECTARES MAY NEED TO BE TREATED FOR GRASSHOPPER CONTROL IN 1988. REF (A) PROVIDED CROP PROTECTION SERVICE LIST OF NEEDS FOR GRASSHOPPER CONTROL IN 1988. THE FOLLOWING IS SUMMARY OF MISSION'S COST ESTIMATE OF THOSE NEEDS:

PESTICIDES.....DLS 1,150,000

EQUIPMENT (SPRAYERS, PROTECTIVE
 - GEAR, RADIOS, CAMP GEAR).....850,000

AERIAL TREATMENT (300 HRS).....450,000

VEHICLES (UNIMOGS, 4X4'S).....650,000

OPERATING COSTS.....300,000

TRAINING.....25,000

TOTAL GOC NEEDS FOR

- GRASSEOPPER CONTROL.....DOLS 3,425,000

5. THE COSTS DESCRIBED IN PARAS 3 & 4 ABOVE CLEARLY INDICATE GOC'S DESIRE FOR SHORT AND LONG TERM INVESTMENTS FROM THE DONOR COMMUNITY TO BOTH DEVELOP ITS CROP PROTECTION SERVICE INFRASTRUCTURE AND TO PREPARE FOR AND FUND ACTUAL CONTROL MEASURES FOR 1988.

6. IN VIEW OF OTHER DONORS' INTEREST, PARTICULARLY IN THE LONG-TERM PROGRAM AND INSTITUTION BUILDING THROUGH TRAINING, THE PROBABILITY THAT THE GRASSHOPPER POPULATIONS WILL NORMALIZE, AND THE GAPS REMAINING IN THE GOC'S PLAN TO CONTROL DESERT LOCUST, MISSION BELIEVES THAT A.I.D. SHOULD CONSIDER ASSISTING THE GOC BY PARTICIPATING IN THE DESERT LOCUST CONTROL PROGRAM FOR 1988.

GIVEN THAT THE CAPABILITIES OF THE CROP PROTECTION SERVICE ARE AT PRESENT LIMITED BY ITS SMALL STAFF AND A PRACTICALLY NON-EXISTENT INFRASTRUCTURE, A PROGRAM TO CONTROL DESERT LOCUST IN REMOTE AREAS OF CHAD SHOULD FOCUS ON AERIAL SURVEY AND TREATMENT AND MINIMIZE THE USE OF GROUND TEAMS. THE CROP PROTECTION SERVICE HAS

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BENEFITTED TREMENDOUSLY FROM ITS EXPERIENCE AND EXTENSIVE TRAINING FROM THE PREVIOUS TWO YEARS; HOWEVER, THE SERVICE IS STILL VERY WEAK IN SOME RESPECTS. ADDITIONAL TRAINING IS NEEDED BY KEY STAFF MEMBERS IN MANAGEMENT OF LARGE SCALE OPERATIONS. THERE ARE ONLY 25 CROP PROTECTION AGENTS IN CHAD; 15 OF WHOM WERE NEW HIRES IN 1987. AN ADDITIONAL THREE AGENTS AND SEVEN DRIVERS AND SECRETARIES WERE CONTRACTED WITH OTHER DONOR FUNDS FOR THE DURATION OF THE 1987 PROGRAM. THE GOC WILL BE UNABLE TO FUND ANY ADDITIONAL INCREASES IN PERSONNEL IN THE FORESEEABLE FUTURE. AN FAO/CHAD END-OF-SEASON REPORT NOTES THAT THE 1987 PROGRAM WAS HAMPERED IN PART BY INADEQUATE SUPERVISION OF EXTENSION AGENTS, SHORTAGE OF VEHICLES, SHORTAGE OF SPARE PARTS, AND LACK OF PROPER VEHICLE MAINTENANCE. SOME OF THE VEHICLES WHICH WERE PROVIDED BY OTHER DONORS DURING THE 1986 CAMPAIGN WILL NOT BE FUNCTIONAL BY THE START OF THE 1988 CAMPAIGN BECAUSE OF POOR MAINTENANCE AND BAD DRIVING HABITS. FYI: A.I.D. ESTABLISHES LIFE OF VEHICLES IN THE SAHEL AT TWO YEARS. END FYI. IN A VAST COUNTRY LIKE CHAD, MANY AREAS ARE INACCESSIBLE BECAUSE OF INADEQUATE TRANSPORT AND BAD ROADS.

7. MISSION'S EXPERIENCE IN THE 1987 GRASSHOPPER CONTROL PROGRAM SUGGESTS THAT SUCH PROGRAMS BE VERTICALLY INTEGRATED TO ENSURE THE TIMELY DELIVERY OF REQUIRED INPUTS FOR PROPER IMPLEMENTATION. THE PROGRAM'S ACTIVITIES SHOULD BE NARROW IN SCOPE AND WELL-FOCUSED ON SPECIFIC SITES. RELIANCE ON OTHER DONORS' INPUTS TO MEET THE OBJECTIVES OF ONE'S OWN PROGRAM IS VERY RISKY. A.I.D.'S 1987 PROGRAM, FOR EXAMPLE, PROVIDED ALL THE INPUTS REQUIRED FOR THE SUCCESS OF THE AERIAL SPRAYING OPERATION IN FIVE EASTERN PREFECTURES OF CHAD. PESTICIDES WERE PROVIDED AND DELIVERED TO THE END USER IN THE FIELD, FULLY SUPPORTED AERIAL SERVICES WERE CONTRACTED, SURVEY TEAMS WERE ORGANIZED AND FUNDED, AND TECHNICAL ASSISTANCE WAS PROVIDED TO SUPERVISE FIELD OPERATIONS.

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YAOUNDE FOR CONTRACTING OFFICER

E.O. 12356: N/A

TAGS: EAID, CD

SUBJECT: CHAD 1988 NEEDS FOR CONTROL OF DESERT LOCUST

FOR THESE REASONS, MISSION BELIEVES THAT A.I.D. PARTICIPATION IN GOC'S DESERT LOCUST CONTROL PROGRAM FOR 1988 SHOULD TAKE ADVANTAGE OF PREVIOUS EXPERIENCE AND CONCENTRATE ITS EFFORTS IN FUNDING ONLY AN AERIAL CONTROL ACTIVITY.

8. THE A.I.D. AERIAL CONTROL ACTIVITY WOULD CONCENTRATE ITS EFFORTS IN NORTH EASTERN CHAD BETWEEN 15 & 17 DEGREES NORTH AND 20 & 23 DEGREES EAST. THE TARGET AREA TO BE TREATED WOULD BE 50,000 HECTARES (25 PERCENT OF GOC'S TARGET).

A SINGLE SPRAY HELICOPTER, SUCH AS AN ALLOUETTE II, WITH SEATING FOR FOUR PERSONS AND A RANGE OF 400 KILOMETERS WITHOUT REFUELING IS HIGHLY RECOMMENDED. SUCH AN AIRCRAFT WOULD BE CAPABLE OF TRANSPORTING ESSENTIAL TECHNICIANS AND COVERING EFFECTIVELY THE AREAS OF THE PROJECT SITE. IT WOULD BE EQUIPPED WITH MICRONAIR TYPE SPRAY GEAR FOR ULV FORMULATION PESTICIDE. THE VERSATILITY OF A HELICOPTER WOULD ENABLE THE RAPID DEPLOYMENT FROM ANY SITE WITHOUT THE NEED FOR LANDING STRIPS, AND CAN LAND ANY WHERE TO SURVEY AREAS TO MAKE AN ACCURATE DETERMINATION ON WHETHER TREATMENT IS NEEDED OR NOT. THE USE OF A HELICOPTER WOULD ADD GREAT EFFICIENCY TO THE CONTROL PROGRAM; IT WOULD HAVE A FAR GREATER ADVANTAGE OVER ANY GROUND CONTROL METHODS WHICH IN THE PAST HAVE BEEN LIMITED BY INADEQUATE TRANSPORT, NON-EXISTENT ROADS, AND THE DIFFICULTY OF KEEPING SEVERAL SCATTERED TEAMS SUPPLIED WITH FUEL, PESTICIDES, AND PERDIEM. ONE HELICOPTER TEAM WOULD BE MUCH MORE MANAGEABLE TEAM SEVERAL GROUND TEAMS IN THIS PROJECT SITE.

THE HELICOPTER SPRAY TEAM WOULD BE CONTRACTED AS A FULLY-SUPPORTED SELF SUSTAINED SERVICE PACKAGE INCLUDING THE PROCUREMENT AND DELIVERY OF FUEL. TECHNICAL ASSISTANCE WOULD BE CONTRACTED TO MANAGE THE SPRAYING OPERATION IN THE FIELD AND REPORT ON ITS STATUS REGULARLY. THE TECHNICAL ASSISTANCE WOULD ALSO BE A QUALIFIED ENTOMOLOGIST WHO WOULD FLY IN THE HELICOPTER TO IDENTIFY AREAS TO BE SPRAYED. A LOCAL HIRE TECHNICIAN WOULD BE CONTRACTED TO ASSIST THE ENTOMOLOGIST IN THE DAY-TO-DAY ACTIVITIES.

THE PARTICIPATION OF THE CROP PROTECTION SERVICE IN THE A.I.D. PROGRAM IS ALSO IMPORTANT TO ENSURE THE TRANSFER

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OF MANAGEMENT PRINCIPLES AND PROCEDURES IN THIS TYPE OF OPERATION. CROP PROTECTION AGENTS WOULD ALSO ENSURE COLLABORATION WITH GROUND CONTROL TEAMS AND FACILITATE CONTACT WITH LOCAL AUTHORITIES. THEY WOULD WORK ON A DAY-TO-DAY BASIS WITH CONTRACT STAFF SURVEYING, DELINIATING INFESTED AREAS, AND SCHEDULING THE HELICOPTER'S ACTIVITIES. AT LEAST THREE AGENTS WOULD BE ASSIGNED TO BE MEMBERS OF THE TEAM FOR THE DURATION OF THE OPERATION. PERDIEM AND OTHER OPERATING FUNDS WOULD NEED TO BE PROVIDED BY A.I.D.

THE ENTOMOLOGIST AND THE GOC AGENTS WOULD BENEFIT TREMENDOUSLY FROM THE INFORMATION PROVIDED IN THE NOAA GREENNESS MAPS. THE MOST FAVORABLE HABITATS FOR DESERT LOCUST HATCHINGS COULD BE EASILY DELINEATED AND SERVE AS A GUIDE TO BETTER ORIENT THE SPRAY HELICOPTER. WITHOUT THESE MAPS, THE TEAM WOULD HAVE TO WONDER ACROSS THE DESERT AIMLESSLY IN HOPES OF FINDING DESERT LOCUST. MUCH FLYING TIME WOULD BE LOST IN RANDOM PROSPECTION. THE GREENNESS MAPS WOULD NEED TO BE DELIVERED TO CHAD EVERY TWO WEEKS WITH A MINIMUM TIME DELAY. TWO IMAGES WOULD BE NEEDED, ONE COVERING ALL OF CHAD AT A SCALE OF 1/1,000,000 AND THE SECOND COVERING THE AREA BETWEEN 15 & 17 DEGREES NORTH AND 20 & 23 DEGREES EAST AT A SCALE OF 1/200,000. DETAILS SUCH AS DRY RIVER BEDS, LARGER TOWNS, AND PREFECTURE BOUNDARIES MUST BE INCLUDED ON THE 1/200,000 SCALE IMAGE.

THERE ARE CURRENTLY 20,000 LITERS OF MALATHION IN THE A.I.D. WAREHOUSE IN ABECHE WHICH ARE PROGRAMED FOR THE BT

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STATE PASS TO AF/C, AF/EPS AND EB
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 ABIDJAN FOR REDSO PASS RLA
 YAOUNDE FOR CONTRACTING OFFICER

E.O. 12356: N/A

TAGS: EAID, CD

SUBJECT: CHAD 1988 NEEDS FOR CONTROL OF DESERT LOCUST

HELICOPTER OPERATION. AN ADDITIONAL 30,000 LITERS WILL
 NEEDED TO BE PROVIDED TO COVER THE TOTAL REQUIRED TO
 SPRAY 50,000 HECTARES. CROP PROTECTION SERVICE WILL
 REPROGRAM EXISTING STOCK OF 30,000 LITERS OF
 FENITROTHION 50 PERCENT ULV FROM THE GRASSHOPPER CONTROL
 PROGRAM TO THE A.I.D. AERIAL CONTROL PROGRAM IF OTHER
 DONORS PLEDGE ADDITIONAL PESTICIDES. FOR NOW, MISSION
 BELIEVES IT PRUDENT FOR A.I.D. TO PROGRAM FUNDS TO COVER
 THE COST OF PROCUREMENT OF THE NEEDED 30,000 LITERS IN
 THE EVENT THAT OTHER DONOR PLEDGES DO NOT COME FORTH.

9. FOR AFR/SWA: MISSION REQUESTS AFR FUNDING TO ASSIST
 THE GOC IN ITS 1988 DESERT LOCUST CONTROL PROGRAM.
 AFR'S ASSISTANCE WOULD SERVE AS A STOP GAP MEASURE WHILE
 OTHER DONOR LONG TERM PROGRAM IS BEING DEVELOPED. GOC
 HOPES TO HAVE OTHER DONOR FUNDING FOR LONG TERM PROJECT
 BY 1989. TOTAL FUNDING REQUIREMENTS FOR AN A.I.D.
 AERIAL CONTROL OPERATION ARE ESTIMATED AT DOLS 970,000.

BUDGET:

HELICOPTER SERVICES

- 250 HOURS X DOLS 2,500/HR.....DOLS 625,000

TECHNICAL ASSISTANCE

- TWO PERSONS 5 & 7 MONTHS EA.....100,000

NOAA GREENNESS

MAPS.....50,000

GOC SURVEYORS' PERDIEM & O.E.....15,000

IN-COUNRTY TRANSPORT OF PESTICIDE.....15,000

MALATHION ULV 30,000 LITERS X DOLS 5.50/L.....165,000

TOTAL A.I.D. CONTRIBUTION.....970,000

10. FOR AFR/SWA & FODAG: CROP PROTECTION SERVICE
 ASSURES MISSION THAT IT WILL PASS APPROXIMATELY 30,000
 LITERS OF FENITROTHION 50 PERCENT ULV OF IN-COUNTRY
 STOCKS PROVIDED BY FAO IN 1987 FOR LOCUST CONTROL TO
 A.I.D. AERIAL OPERATION IF JAPANESE PLEDGE FOR
 ADDITIONAL PESTICIDE IS CONFIRMED AND SCHEDULED FOR
 TIMELY DELIVERY TO CHAD. THIS COULD REDUCE THE A.I.D.
 CONTRIBUTION BY DOLS 165,000 TO DOLS 805,000. PLEASE
 CONTACT APPROPRIATE PARTIES FOR VERIFICATION OF WHAT
 PESTICIDE JAPAN HAS PLEDGED, WHAT AMOUNT IS PROGRAMED

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FOR CHAD, AND WHAT IS THE TARGET DELIVERY DATE AND ADVISE MISSION BY IMMEDIATE TELEGRAM.

11. MISSION HAS REVIEWED ALL POSSIBILITIES FOR COVERING A PORTION OF THE DOLS 970,000 NEEDED FOR THE OPERATION WITH CURRENT OYB FUNDS AND LOCAL CURRENCY AND IS UNABLE TO DRAW FUNDS FROM THESE ACCOUNTS AT THIS TIME WITHOUT ADVERSELY AFFECTING THE CURRENT LONG TERM DEVELOPMENT PROGRAM. IT IS, HOWEVER, IMPORTANT TO KEEP IN MIND THAT THE CROP PROTECTION SERVICE IS FAR FROM MEETING THE MINIMUM REQUIREMENTS OF A REASONABLY WELL-FUNCTIONING CROP PROTECTION SERVICE AND WILL REQUIRE INPUTS IN ADDITION TO THOSE OF OTHER DONORS AS DESCRIBED ABOVE. WE WILL CONTINUE TO URGE OTHER DONORS FOR CONTRIBUTIONS AND WE TRUST AID/W AND ROME WILL DO THE SAME.

12. MISSION REQUESTS AID/W CONSIDER FUNDING OF DESERT LOCUST AERIAL CONTROL PROGRAM FOR CHAD. PLEASE ADVISE.

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ANNEX B

COST ASSESSMENT OF THE PROGRAM

(N'Djamena telegram 7117 of December 01, 1988)

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 LE RUTAND #7117/01 337 **
 ZNR UUUUU ZZH
 O 221438Z DEC 88
 FM AMEMBASSY NDJAMENA
 TO SECSTATE WASHDC IMMEDIATE 2443
 ET
 UNCLAS SECTION 01 OF * NDJAMENA #7117

CLASS: UNCLASSIFIED
 CERGE: 12/01/88
 APPRV: A/AID/REP:CAAS
 DRFTD: ADO:AFULLER
 CLEAR: 1.CONT:LEBLAN
 2.PUPE:LMCERID
 DISTR: A103 AMF DCM

AIDAC

STATE PASS TO AF/C, AF/EFS AND EB
 AID/W FOR OFDA/DLTF

E.O. 12356: N/A
 TAGS: FAID, CD
 SUBJECT: CEAD - DESERT LOCUST CONTROL ASSISTANCE LEVELS

REF: STATE 372108

NDJ FILE CODE: PROJECT 677-0256

1 FOLLOWING INFORMATION IS PROVIDED IN RESPONSE TO
 REPTL PARA 3. ALL FIGURES IN PARA 2 BELOW ARE
 ESTIMATED COSTS AS DETERMINED FROM MISSION'S ACCOUNTING
 RECORDS AND WITH INFORMATION PROVIDED BY THE CROP
 PROTECTION SERVICE AND THE MINISTRY OF AGRICULTURE'S
 STATISTICS OFFICE. IT IS IMPORTANT TO NOTE EXPLANATION
 IN PARA 4 ON HOW THESE FIGURES WERE DETERMINED. THE
 FIGURES MAY BE USED FOR PLANNING PURPOSES BUT SHOULD BE
 USED WITH CAUTION AS THE BASIS FOR SOME OF THE
 CALCULATIONS IS WEAK DUE TO THE LACK OF DATA
 PARTICULARLY IN ESTIMATION OF CROP LOSSES & LOSSES
 PREVENTED BY CONTROL PROGRAM. INFORMATION WHICH IS NOT
 AVAILABLE OR NOT APPLICABLE IS LISTED AS N/A.

2.	FY 88 ACTUAL (DOLS)	FY 89 PROJECTED NEED (DOLS)	FY 89 RESOURCES AVAILABLE (DOLS)
A. MISSION BILATERAL ESF & DA DOLLAR COMMITMENTS	482,603	- 0 -	- 0 -
E. MISSION LOCAL CURRENCY ..	- 0 -	N/A	- 0 -
C. AFR REGIONAL LA COMMITMENTS .. (OFDA/FAO)		520,000	N/A
D. OFDA EXPEN- DITURES	480,000	302,000	300,000
E. OTHER DONOR EXPENDITURES	1,951,598	1,200,000	435,000
F. HOST COUNTRY EXPENDITURES	50,000	100,000	100,000

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G. ESTIMATED
CROP LOSS FROM
LOCUST 1,107,000 N/A N/A

H. ESTIMATED
CROP LOSSES
PREVENTED BECAUSE
OF DL PROGRAM ... 295,200 N/A N/A

IN SUMMARY:

- TOTAL EXPENDITURES 1988 (A THRU F) ... DOLS 2,964,201.
- VALUE OF CROP LOSSES DOLS 1,107,000.
- VALUE OF CROP SAVED DOLS 295,200.
- NEEDS FOR 1989 DOLS 1,900,000.

3. NEED OF DOLS 1,600,000 FOR 1989 IS MISSION'S ESTIMATE OF MINIMUM REQUIREMENTS FOR CROP PROTECTION SERVICE TO LAUNCH A LOCUST CONTROL PROGRAM IF THE PROBLEM DEVELOPS NEXT YEAR. OF THESE NEEDS, DOLS 835,000 ARE NOW AVAILABLE FOR 1989, WHICH LEAVES DOLS 1,265,000 TO BE COVERED BY THE DONOR COMMUNITY. HOWEVER, CPS PRELIMINARY PLANS ARE TO LAUNCH LOCUST CONTROL PROGRAM, WHICH IN OUR AND OTHER DONORS' OPINION, IS TOO AMBITIOUS AND MAY REQUIRE AS MUCH AS DOLS 5 MILLION TO SPRAY 600,000 HA, TRAIN AND EQUIP 20,000 VILLAGE BRIGADES, INCREASE CPS FIELD TEAMS TO 20 AND BUY ADDITIONAL SPRAY EQUIPMENT AND VEHICLES. MISSION NOW WORKING THROUGH TECHNICAL COMMITTEE TO HELP CPS DEVELOP A REALISTIC PLAN. IN ADDITION, THE NEW UNDP/FAO/DUTCH/FAC PROJECT SCHEDULED TO START IN CY 1989 TO SUPPORT AND STRENGTHEN THE CPS WILL HELP IN DEVELOPMENT OF LONG TERM STRATEGY TO ADDRESS THE LOCUST PROBLEM.

4. NOTES ON FIGURES IN PARA 2 ABOVE:

A. DOLS 482,803 IS ESTIMATED EXPENDITURES FROM FUNDS ALLOWED TO MISSION BY CEFA AND MISSIONS OWN PASA WITH USDA. THESE EXPENDITURES ARE COMPOSED OF:

DOLS 342,771 FOR HELICOPTER SERVICES.
FP

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STATE PASS TO AF/C, AF/EPS AND FB
AII/W FOR OFDA/ELTF

I.O. 12356: N/A

TAGS: EAID, CE

SUBJECT: CHAD - DESERT LOCUST CONTROL ASSISTANCE LEVELS

DOLS 102,862 FOR GENERAL SUPPORT COSTS, TECHNICAL ASSISTANCE, TRANSPORT, AND SURVEY. THIS IS ONLY A ROUGH ESTIMATE OF COSTS RELATED TO THE 1989 SEASON'S DESERT LOCUST CONTROL PROGRAM. SINCE MISSION'S ACCOUNTING RECORDS DO NOT SEPARATE 1987 GRASSHOPPER CONTROL ACTIVITIES FROM THE 1988 LOCUST CONTROL ACTIVITIES, WE CANNOT GIVE MORE PRECISION AT THIS TIME DUE TO THE 12/22/88 DEADLINE FOR THIS EXERCISE.

IOLS 36,970 IS ESTIMATE COST FOR TECHNICAL ASSISTANCE PROVIDED THROUGH MISSION'S FASA WITH USDA.

F. LOCAL CURRENCY NOT USED FOR LOCUST CONTROL.

G. FIGURES FOR A.I.D. FUNDS EXPENDED BY FAO FOR THE REGIONAL PROGRAM ARE NOT AVAILABLE TO MISSION. DOLS 500,000 FOR 1989 NEEDS FROM A.I.D. WOULD BE FOR THE CHAD PORTION OF AN A.I.D. MANAGED AND DIRECTED REGIONAL LOCUST CONTROL PROGRAM. FIGURE ON AVAILABLE A.I.D. FUNDS FOR 1989 NOT AVAILABLE.

H. IOLS 480,000 IS MISSION'S ESTIMATE OF ITEMS PAID DIRECTLY BY OFDA FOR THE CHAD OPERATION THIS SEASON AND ARE COMPOSED OF:

DOLS 180,000 FOR 30,000 LITERS OF MALATHION.
IOLS 300,000 FOR TURBO THRUSHERS.

PRESENT THINKING IN MISSION IS THAT LOCUST CONTROL PROGRAM MAY BEST BE ADDRESSED THROUGH AN A.I.D. MANAGED AND DIRECTED REGIONAL PROGRAM. THUS, DIRECT FUNDING FOR MISSION BILATERAL EFFORT WOULD NOT BE NEEDED. DOLS 300,000 NEEDED FOR 1989 REPRESENT THE ESTIMATED VALUE OF 50,000 LITERS OF USAID MALATHION IN STOCK WHICH ARE AVAILABLE FOR 1989.

I. DOLS 1,951,598 ESTIMATED EXPENDITURES BY OTHER DONORS IS BROKEN DOWN AS FOLLOWS:

DOLS 927,620 FOR PESTICIDES.
IOLS 120,462 FOR VEHICLES.
DOLS 193,138 FOR SPRAY GEAR.
DOLS 36,665 FOR RADIOS.
IOLS 300,333 FOR AERIAL SERVICES.
DOLS 394,000 FOR OPERATING COSTS.

DOLS 1,020,000 ESTIMATED NEED FROM OTHER DONORS FOR 1989 IS BROKEN DOWN AS FOLLOWS:

IOLS 435,000 FOR PESTICIDES.
IOLS 150,000 FOR REPLACEMENT VEHICLES.

DOLS 100,000 FOR ADDITIONAL PUMP SPRAYERS.
DOLS 15,000 FOR ADDITIONAL RADIOS.
DOLS 300,000 FOR OPERATING COSTS.

DOLS 435,000 AVAILABLE FROM OTHER DONORS IS THE ESTIMATED VALUE OF THEIR PESTICIDE STOCKS IN COUNTRY.

F. HOST COUNTRY EXPENDITURE OF DOLS 50,000 WAS FOR SALARY OF CROP PROTECTION STAFF OF 35 INDIVIDUALS. UP TO 1988, GOC EMPLOYEES HAD OFFICIALLY BEEN PAID HALF SALARY, BUT STARTING IN 1989, GOC WILL PAY FULL SALARIES TO ALL GOVERNMENT EMPLOYEES.

G. FROM MINISTRY OF AGRICULTURE FIGURES OF CEREAL CROP LOSSES DUE TO PEST DAMAGE AND FLOODS, MISSION ESTIMATES CEREAL CROP LOSSES DUE TO LOCUST DAMAGE IN NORTHERN SAHILIAN PREFECTURES AT 4,500 TONS WHICH IS ABOUT 2 PERCENT OF TOTAL PRODUCTION IN THESE PREFECTURES.

TOTAL VALUE OF CROP LOSS IS 4,500 TONS X DOLS 246 PER TON (OCTOBER 1988 N'DJAMENA MARKET PRICE OF MILLET) EQUALS DOLS 1,107,000.

E. LACK OF SPECIFIC INFORMATION AND DATA ON LOCUST BEHAVIOR IN CHAD PREVENTS MISSION FROM ACCURATELY CALCULATING POTENTIAL LOSSES HAD CONTROL EFFORTS NOT TAKEN PLACE. MISSION CAN ONLY ESTIMATE CROP LOSS PREVENTED AS A RESULT OF CONTROL EFFORTS AS FOLLOWS: TOTAL AREA TREATED 100,000 HECTARES X CEREAL YIELD OF 0.6 TONS PER HECTARE X 2 PERCENT POTENTIAL LOSS EQUALS 1,200 TONS OF CEREAL CROP SAVED FROM LOCUST ATTACK. THUS, 1,200 TONS OF CEREALS SAVED X DOLS 246 PER TON FT

UNCLAS SECTION 03 03 NDJAMENA 07117)

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E.O. 12356: N/A

TAGS: FAID, CE

SUBJECT: CHAD - DESERT LOCUST CONTROL ASSISTANCE LEVELS

EQUALS DOLS 295,200 VALUE OF CROP SAVED FROM LOCUST
ATTACK. THE WEAKNESS IN THIS CALCULATION IS THAT OF
RELATING AREA TREATED TO CROP AREA SAVED WHICH IN
REALITY DO NOT NECESSARILY CORRESPOND.

I. AS IN CALCULATING LOSSES PREVENTED, MISSION DOES NOT
HAVE SUFFICIENT INFORMATION TO ACCURATELY DETERMINE
HECTARES PROTECTED, AND CAN ONLY SITE AREA TREATED AS
AREA PROTECTED WHICH IS 100,000 HECTARES. PUGH
BT

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