

Famine Early Warning System Network

Mozambique Integrated Information
Network for Decision-Making (MIND)

**Semi-Annual Report
March-September 2001**

Contract OUT-AOT-I-803-00-00142-00

Task Order No. 803

Submitted by:

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September 28, 2001

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Introduction

USAID/Mozambique and Chemonics International signed a Task Order on March 26, 2001 for an activity called the “Mozambique Integrated Information Network for Decision-making” (MIND) as a buy-in to the Famine Early Warning System Network (FEWS NET) activity implemented by Chemonics. The MIND activity is part of the Congressionally-approved flood supplemental that is providing funds to Mozambique for post-disaster recovery and disaster preparedness. As stipulated in the MIND Task Order, semi-annual reports should be submitted to USAID every six months. Because the project start-up was delayed until late March 2001, the Cognizant Technical Officer for the MIND activity instructed that the first semi-annual report should be submitted at the end of September 2001. The first annual report will be submitted at the end of March 2002, and the final report after completion of the activity (either the end of September or the end of December 2002.)

The MIND Task Order contained five objectives:

- Objective 1. Strengthen Weak Early Warning System and Communications System for Flooding and Cyclones
- Objective 2. Improve Decision-Maker Access to Integrated Data, Analyses and Decision Structures for Decision Support
- Objective 3. Fill Critical Gaps in Hazard, Vulnerability and Resource Information
- Objective 4. Prioritize Contingency Planning for Preparedness and Response as well as Preparedness Planning and Mitigation
- Objective 5. Strengthen Government Capacity to:
 - Organize and Implement an Effective Hazard Early Warning System and Communications System for Flooding and Cyclones,
 - Improve Decision-Maker Access to Integrated Data, Analyses and Decision Structures for Decision Support,
 - Fill Critical Gaps in Hazard, Vulnerability and Resource Information, and
 - Provide Leadership and Direction for Contingency Planning that Addresses Preparedness, Response and Prevention (Mitigation)

Task Order Start-Up

Start-up activities took a significant portion of time during the first few months of the MIND TO, although no insurmountable problems were encountered. A project assistant from the Chemonics Head Office was sent to Mozambique for a month to help with start-up. During this start-up phase, a new office in Somersfield was established, furnished and networked; new support staff and technical staff were hired and trained; and the Senior Technical Advisor and Coordinator (STAC) and her family were settled. Support from USAID greatly facilitated start-up, in terms of assistance with customs clearance, government regulations, a vehicle, and temporary furnishings for the STAC.

The first MIND work plan was submitted to, and approved by, USAID in early May. This work plan covered the period from May – October 2001. A revised MIND work plan for the period of October – December 2001 is attached here. By the end of December, a work plan for 2002 will be submitted.

The first work plan included a careful review of the five objectives above. Based on this review, and guidance from USAID, one overall goal for the MIND activity was articulated:

MIND GOAL:

*To make measurable and sustainable improvements in the early warning system for floods, cyclones and other natural disasters during the short period of performance of this Task Order, through **concrete activities** with **tangible outputs**.*

Major Accomplishments to Date

1. *Strengthen Weak Early Warning System and Communications System for Flooding and Cyclones*

Before we could prioritize actions and begin to work on this objective, we analyzed how the existing early warning and communications systems for flood and cyclones were functioning. We realized that there were actually two distinct early warning systems – one for floods and one for cyclones - with very different characteristics, as can be clearly seen on the schema on the next page.

Within the Flood Early Warning System, weaknesses exist at all stages. Data needed to produce detailed and accurate warnings are grossly insufficient, the analytical process is weak, and the lines of authority are unclear (especially between the ARAs and DNA). The dissemination of warnings functions better – in large part due to the role played by radio – but because of the poor quality of the messages themselves, the impact of warnings on the ultimate user is limited. Activities to strengthen the production of flood warnings (such as improvements in data collection or analysis) are quite distinct from activities to strengthen the dissemination of the warning messages produced by those systems.

Within the Cyclone Early Warning System, we noted that no warnings are actually produced within Mozambique. Instead, Mozambique falls under the Regional Specialized Meteorological Center (RSMC) on Reunion Island. This center, operated by the French Meteorological Institute, provides forecasts, alerts and warnings about tropical cyclones threatening Mozambique and the Mozambique Channel via fax and email. INAM receives these warnings, translates them to Portuguese and passes them on to disseminators and users. The dissemination portion of the cyclone early warning system functions, but it is plagued with the same problems as the flood early warning system: the warning messages lack detail and clarity, so the impact on the final user is limited.

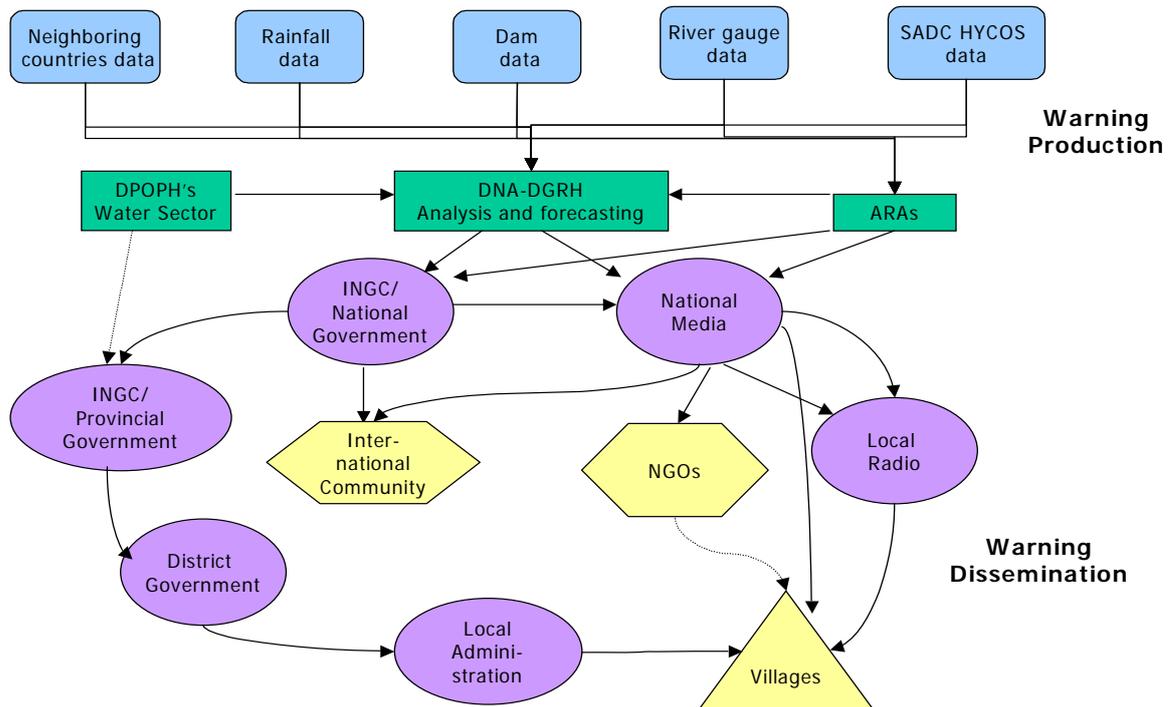
Our analysis also revealed that the so-called “National Early Warning System” at the Ministry of Agriculture has virtually no linkage to either the flood or the cyclone early warning system. Its function is limited to monitoring agricultural production only. The National Disaster Management Institute (INGC) figures prominently in the diagrams of the two early warning systems, but in reality, its role is very limited due to weak capacity.

It is important to highlight the distinction between the dissemination of messages, and the communication of messages. Dissemination refers to the simple provision of information; communication refers to the sharing of meaning. Presently, the media does a reasonable job of *disseminating* warning messages that it receives from technical bodies, but its ability to actually *communicate* the meaning of those messages is limited. The media often reports how many millimeters of rain fell, or how the depth of rivers at key points, or the latitude and longitude of a tropical cyclone, but this technical information means little to most users – whether decision-makers in Maputo or villagers living along a river. It is clear that the technical bodies and the media have to work together to improve their ability to *communicate the meaning* of messages to vulnerable people and decision-makers.

Because the MIND National Communications Specialist was already employed under a separate Task Order (TO3) when the Senior Technical Advisor and Coordinator arrived, many early activities were focused on the communications aspects of this objective¹. The key role played by the media in the early warning process was emphasized repeatedly – in the ARPAC study and the workshop described below and in interviews with decision-makers described under Objective 2.

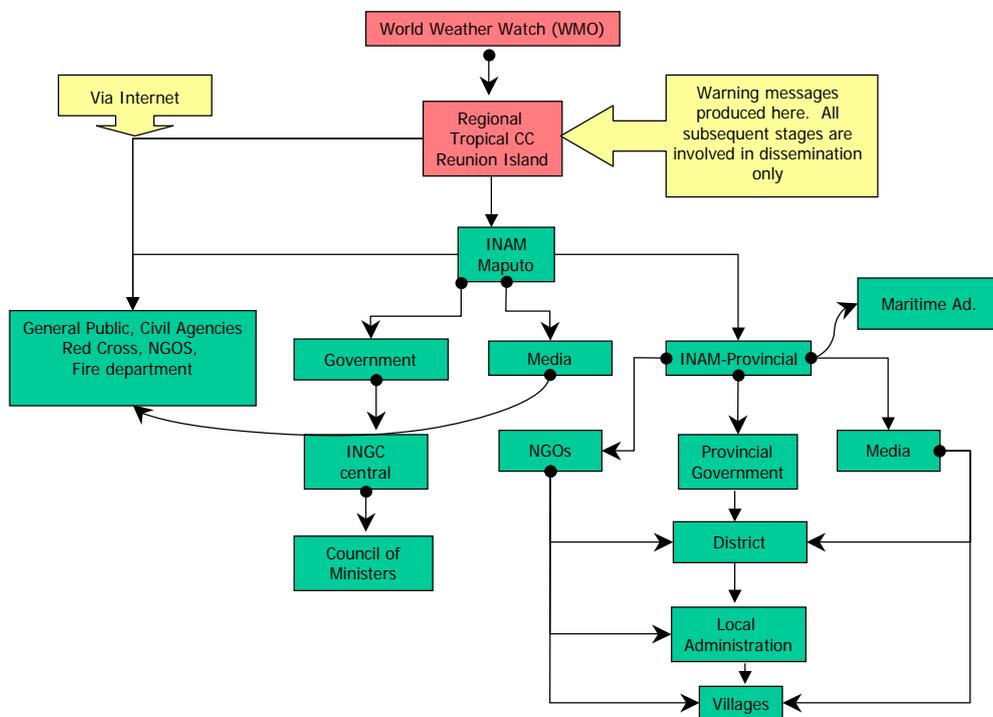
¹ Also, the delayed arrival of the USGS hydrologist working with MIND meant that most work on the data collection and analysis portion of this Objective started later.

Flood Early Warning System



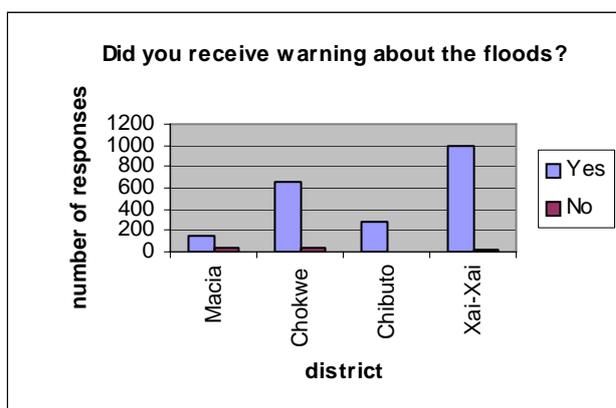
Graphic by FEWS NET MIND, based on input from INAM, DNA, SEED and others. September 2001.

Cyclone Early Warning System



Graphic by FEWS NET MIND, based on input from INAM, DNA, SEED and others. September 2001.

The following paragraphs summarize the main accomplishments during the period:



A Special Study on the Early Warning Aspects of the Limpopo Floods. In June, MIND commissioned ARPAC, the Arquivo do Patrimônio Cultural, to conduct a special study on the early warning aspects of the Limpopo Basin floods based on a survey carried out immediately after the disaster. The report, produced in August in English and Portuguese, included some useful information on how the early warning system worked. It revealed that 95% of the people interviewed in four districts of Gaza Province had received advanced warning of the floods (see

graph). Almost 45% received flood warning by radio, and a further 25% received warning by radio combined with another source like neighbors or local political organization. These two factors influenced the direction of future MIND activities. The dissemination part of the system largely functions thanks to the role played by radio. However, nearly half of the respondents did not act on the warnings received mainly because the information was not specific enough or because they did not think the floods would be so severe.

A Workshop on the Role of Radio in Early Warning, Disaster Preparedness and Response. MIND conducted a one-day workshop in July to look specifically at the role of radio in disasters. The workshop examined the recent experiences with Freeplay self-powered radios, the possible role of RANET (Radio/Internet) technology, and ways to improve the content of warning messages. Experts from all relevant sectors attended the workshop, as well as the Executive Director of the Freeplay Foundation in South Africa. Participants strongly endorsed the role of Freeplay radios for early warning and other uses in Mozambique. Despite the dependence on the radio for information in rural areas, radio ownership levels in Mozambique are very low². Poverty and the poor marketing network mean that batteries are difficult to afford or difficult to obtain, even for household that own radios, so wind-up and solar powered devices offer distinct advantages. The conference also explored ways to improve the messages, and recommended that journalists could do more to improve the messages if they were provided with additional training on disaster topics. The conference report is available in English and Portuguese.

Importation and Distribution of 1500 Freeplay Self-Powered Radios. Based on the ARPAC study and the Workshop, MIND decided to proceed with the immediate importation of 1500 self-powered (solar and wind-up) radios. We wanted to ensure the radios reached the final beneficiaries before the 2001 rainy season commenced in November, both so they could be used for early warning this season and so the distribution logistics would not be constrained by impassable roads. Within two months of the USAID approval of the purchase in July, the radios were manufactured in Cape Town to our specifications (with the USAID logo and special text embedded in the casing), imported duty-free into Mozambique and an agreement was made with the Mozambican Red Cross to assist us with the distribution. The first round of distributions started four days after the radios arrived in-country, and the remainder of the distribution will be done in October. Influential members of rural communities will serve as guardians of the self-powered radios on behalf of their communities. Traditional leaders and Red Cross volunteers in each community select the radios' guardians, and an agreement is signed pledging to use the radio for the benefit of the community. MIND is carefully overseeing the distribution and supporting logistics to the district level. Instructions for use of the radios were translated into six local languages (as well as Portuguese) and distributed along with the radios.

² UNESCO estimated 42 radios per 1000 people in Mozambique in 1997. A recent Radio Mozambique survey suggested 36% of households in Gaza Province and 48% in Maputo Province owned radios.

Study Tour for Journalists to Cahora Bassa Dam and the Southern Africa Regional Climate Outlook Forum (SARCOF). To improve the media's ability to communicate on disaster issues, MIND organized a study tour for four journalists to Cahora Bassa dam and to the annual SARCOF meeting in Malawi. The Cahora Bassa portion of the trip was in response to decision-makers' claims that information from the dam was one of the most confusing and mis-represented pieces of information during the Zambezi flood crisis. The SARCOF meeting provided the journalists with key technical background, so they could communicate the meaning of the seasonal rainfall forecasts better. A number of newspaper articles and radio pieces resulted from the tour.

Needs Assessment Study for the Flood and Cyclone Warning Systems. Most of the above activities focus on the communications portion of this objective. In order to define activities to strengthen the data collection and analysis side of the two early warning systems, a report called "Flood and Cyclone Warning in Mozambique: Description and Assessment of Needs" was completed. A Mozambican consulting firm, Sociedade de Engenharia e Desenvolvimento (SEED) was engaged to prepare the report. SEED had specialized knowledge of the operations of the flood early warning system, as the two principal consultants had been engaged by DFID to support the Department of Water in its information production during the Zambezi floods. The findings of the study will guide the work planning of the MIND Flood and Cyclone Information Specialist, who was hired in mid-August.³

2. Improve Decision-Maker Access to Integrated Data, Analyses and Decision Structures for Decision Support

The Task Order description of this objective was somewhat vague, especially given the short period of performance of the activity. To define concrete activities that will make measurable and sustainable improvements in the early warning system for floods, cyclones and other natural disasters during the short period of performance of this Task Order, MIND carried out the following activities during the reporting period:

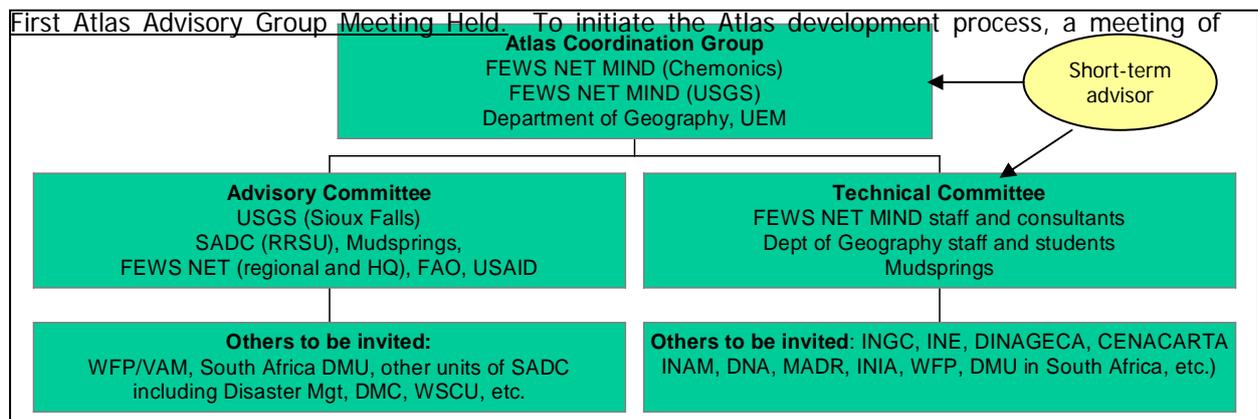
Decision-Maker Needs for Information on Disasters Defined. MIND conducted a series of interviews with people who had been involved in the Limpopo and Zambezi flood disasters. More than 20 interviews were conducted, in person, by email and by phone. A fact-finding trip was taken to Beira at the end of the Zambezi floods, to see how information was accessed and utilized. The interviews revealed clear gaps in the information that was available during both emergencies. Much of the needed information existed, but it was not available by the people who needed it, in the necessary form. The original Task Order focused on creating a single, Internet based decision support system for disasters. Although Internet use is increasing slowly, decision-makers told us that it would not be possible to rely solely on the Internet for information during disasters in the short run.

Conceptual Framework for Atlas Described. In response to the needs articulated by decision-makers, MIND proposed the creation of an "Atlas for Disaster Preparedness and Response in the Limpopo Basin." The idea of the Atlas was described in a concept paper, and the Chemonics and USGS staff developed an illustrative Table of Contents. The idea was discussed with a variety of partners, who expressed widespread support. Partners agreed that an Atlas including basic information and maps required during a disaster, available in hard copy and digital copy, would make a large contribution to meeting decision-makers' information needs.

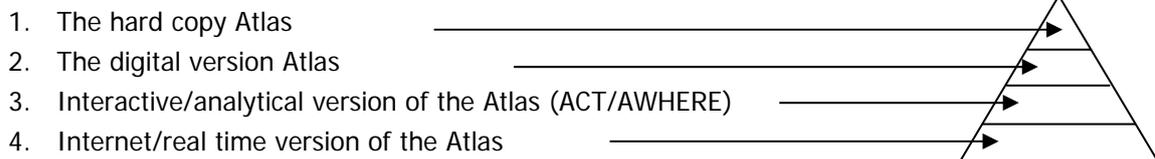
Partnerships for the Atlas Established. One of the first issues that arose in the Atlas design was the need to build Mozambican capacity to ensure that the process of creating an Atlas could be extended to other Basins after the MIND activity ends, if demanded. Various potential partners were examined, and the **Geography Department of the University of Eduardo Mondlane** was selected as the ideal collaborator by the MIND staff from Chemonics and USGS. A formal Memorandum of Understanding will be signed shortly. In addition to the Department of Geography, MIND reviewed existing computer software packages to see if any could be suitable for the digital version of the

³ USAID/Mozambique approved the creation of this position in July after it was determined that no current rationale existed for creating a sub-office in Gaza Province. The post of Gaza Province Communications Specialist in the TO was converted to the Flood and Cyclone Information Specialist.

Atlas. A software program called the Almanac Characterization Tool (ACT) has been developed by Texas A&M University and applied to some settings in Africa. After discussions with the creators of the ACT and various users, MIND decided to invite **Mudspings Geographers**, the consulting firm that has been created to develop applications for the ACT, to attend the first meeting on the Atlas so its potential applicability for this project could be assessed. The **regional FEWS NET office** in Harare will be another important partner on the Atlas project, and that office has been instrumental in identifying other regional partners including the **SADC Regional Remote Sensing Centre**, the **SADC Drought Monitoring Centre** and the **FAO regional office**. The organigram below depicts the structure now in place to implement this activity:



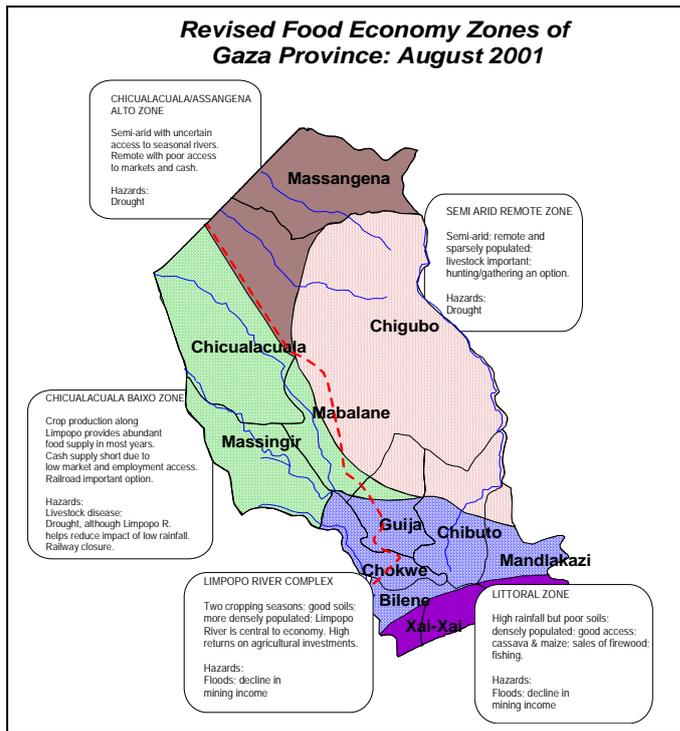
major partners, senior cartographers and geographers, and regional disaster specialists was held. The meeting proved extremely useful for defining the product in detail, addressing a host of technical specifications and developing linkages to other initiatives, especially within the SADC region. The Advisory Group meeting produced a timeline and task list and a revised Table of Contents. The Atlas will be available in various formats to meet different user needs as shown on the pyramid below.



The pyramid indicates that each subsequent product contains more information than the previous product. Thus for example, the entire content of the hard copy version is included in the digital version, plus additional information, and so on down the pyramid. The second product would be a non-analytical software package designed to allow easy access, for busy decision-makers, to digital copies of the Atlas' maps. The third product would be based on the ACT analytical software, giving more sophisticated technical users the ability to customize maps and conduct analyses. Products number two and number three above would be included on a single compact disc. The fourth product (the Internet version of the Atlas) would be the most complex, allowing worldwide accessibility and real time updates of data and analyses during an emergency. The ultimate production of the Internet version of the Atlas depends on the input and interest of Mozambican partners to sustain it.

3. Fill Critical Gaps in Hazard, Vulnerability and Resource Information

Accomplishments to date under this objective have been mainly related to vulnerability information, in part because MIND has a full-time Vulnerability Assessment Specialist on its staff (as of July 2001) and in part because critical information gaps exist in understanding the vulnerability of people to disasters. FEWS NET has always been a key member of the multi-agency Vulnerability Assessment Working Group in Mozambique. Although the VA Group has been assessing vulnerability for a number of years, there has been a growing feeling that it was not capturing the nature of livelihoods or household vulnerability. The FEWS NET Vulnerability Specialist from Washington visited



Mozambique in November 2000 and conducted a baseline assessment in the flood-affected areas of the Limpopo Basin, using a Household Food Economy approach. The findings of this study differed significantly from results garnered previously by traditional vulnerability assessments, and there was keen interest from partners in learning more about this approach. Specific accomplishments under this objective include:

Food Economy Baseline for the Upper Limpopo Food Economy Zone Developed. In conjunction with the VA Specialist from Washington, a baseline assessment of the northern portion of the Limpopo Basin was conducted by MIND. Draft study results have been summarized in a prototype profile, which will be repeated for other zones throughout the Limpopo Basin (and

included in the Atlas). The assessment found that even the poorest households produced enough food to meet their basic food needs in a normal year. Marketing difficulties constrained all households, as production surpluses were difficult to market thus limiting the availability of cash to meet other needs.

VA Group Partners Trained on Food Economy Approach. VA Group partners from the Ministry of Agriculture, Ministry of Health and World Food Program participated in the field work and analysis for the Upper Limpopo Baseline Assessment. The head of the National Early Warning Unit and the newly appointed head of the VA Group from the government participated received on-the-ground training in the approach during the field work.

SADC Workshop on Vulnerability Assessment. The VA Specialist participated in a 10-day workshop in Malawi to further develop her VA skills, along with key members of the VA group.

Plan Series of Workshops on Mapping Food Economy Zones Nationwide. Food economy zoning is the first step toward developing food economy baseline assessments. The zoning exercise encourages people to think about grouping households according to their livelihoods instead of according to traditional breakdowns like administrative boundaries, food production zones, etc. The VA Specialist has organized a series of three workshops – in the south, center and north – to attempt to map the entire country by livelihood zones. Key informants from each region have been invited and VA Group partners will help facilitate the workshops. These workshops will help the VA Group to prioritize future baseline work, and will help increase the understanding of the food economy approach. The three workshops will be held in October.

Hazard Assessment for Targeting Radio Distribution. MIND carried out a statistical review of historical records on floods and cyclones, to develop a table showing the frequency of occurrence of each type of disaster. This analysis was matched with the Mozambican Red Cross' list of priority districts for its disaster preparedness activities. Freeplay radios were targeted to districts with a high frequency of disasters and included in CVM's priority list.

4. Prioritize Contingency Planning for Preparedness and Response as well as Preparedness Planning and Mitigation

It is difficult to apply the overall MIND goal of making “measurable and sustainable improvements in the early warning ... through concrete activities with tangible outputs” to this Objective. Contingency planning, preparedness planning and mitigation activities are by nature process-oriented. Many of MIND’s improvements to the overall early warning system, listed above under Objectives 1, 2 and 3, will contribute indirectly to the contingency and preparedness planning process. We expect the Atlas for Disaster Preparedness and Response in the Limpopo Basin to make a significant contribution to both preparedness and response planning.

The Government of Mozambique and the United Nations have made significant progress over the past few years in creating a contingency planning process at the national and sub-national level. Donors and major NGOs like the Mozambican Red Cross have also started preparing annual contingency plans. MIND has participated in the processes to the extent practical, but at present there appears to be little we can do except participate in ongoing processes. (It should be noted that USAID has removed the sub-deliverable asking MIND to revise the Mission Disaster Preparedness plan from this Objective.) The contingency planning processes that MIND participated in under this Objective include:

Participation in the “Lessons Learned” Workshop for the Zambezi Floods. The Government and United Nations held a workshop on Lessons Learned during the 2001 floods in July. The STAC participated in that meeting.

Participation in the SADC Post-Rainy Season Assessment. The STAC participated in this meeting organized by the SADC Water Sector Coordinating Unit in July.

Participation in SARCOF and National Level Follow-up. MIND staff participated in the annual Southern Africa Climate Outlook Forum, and participated in national-level meetings to look at the implications of the forecast that followed the regional meeting.

Contribution to the Mission Disaster Relief Plan. MIND provided requested input for the new Mission plan.

5. Strengthen Government Capacity

This objective was written to include strengthening government capacity in each area listed under Objectives 1-4. We view this as our cross-cutting objective, in that transcends all of our activities. As stated in the MIND goal, we plan to ensure that everything we carry out during this short activity bolsters local capacity for the future. We also preferred to revise this objective to read, “Strengthen **Mozambican** Capacity Through Joint Activities and Networking,” rather than “Strengthen Government Capacity.” Because this Objective is cross-cutting, most of the accomplishments here have been mentioned in the activities described above.

One important aspect of MIND’s capacity building efforts that was not highlighted in the preceding sections is the ongoing internship of **three students from University of Eduardo Mondlane** at FEWS NET. The three interns are in their fourth year of study at the Department of Geography. MIND offered to host the students, and they have been helping map the radio distribution, preparing for the food economy zoning workshops and assisting with other needs. We expect the students to be heavily involved in the Atlas project. The USGS hydrologist is providing them with tutorials and skills enhancement.

To demonstrate our commitment to building local capacity and networking, a list of partners to date is provided below:

| Active Partnerships | Activity |
|---|--|
| ARPAC | Fixed price contract to carry out a special study on socio-cultural implications of the early warning system during the Limpopo floods completed. Future collaboration planned. |
| Cruz Vermelha de Mocambique (Red Cross) | Formal collaboration to distribute 1500 Freeplay wind-up radios in 25 districts in four provinces. |
| SEED | Fixed price contract to carry out special study on the technical requirements to improve the flood and cyclone early warning system completed. |
| Radio Mozambique | Regular collaboration to improve reporting on disaster events; two journalists (one from national radio and one from provincial radio) sent on study tour to Cahora Bassa and SARCOF; strong participation in planned disaster training course expected. |
| University of Eduardo Mondlane, Department of Geography | Formal collaboration on the creation of the Atlas for Disaster Preparedness and Response in the Limpopo Basin. Three interns from Department based at MIND. Memorandum of understanding to be drafted; equipment, training to be provided. Demonstration of Almanac Characterization Tool given to 60 students by MIND consultant from Mudsprings. |
| Vulnerability Assessment Group (multi-agency); Ministry of Agriculture and Rural Development Early Warning Unit | Training on Food Economy approach provided; collaboration on food economy zoning workshops undertaken. |
| Noticias newspaper | Journalist supported for study tour to Cahora Bassa and SARCOF. |
| Instituto de Comunicacao Social (ICS) | Community radio journalist supported for study tour to Cahora Bassa and SARCOF; trainers identified for technician training for Freeplay radio repair; strong participation in planned disaster training course expected; translation of Freeplay instructions into six Mozambican languages completed. |
| Vulnerable rural communities | Freeplay radios distributed to 1500 guardians in approximately 75 communities along with instructions in six local languages. Training on radios provided; community listening concept encouraged. |
| INAM (National Meteorological Institute) | Informal collaboration on RANET and cyclone classifications started; formal agreement to be made. MIND (USGS) providing equipment and technical training in satellite based rainfall estimation. |

| Other partnerships (regional, future, etc.) | Activity |
|---|---|
| INGC | Involved in radio workshop; will be invited to participate in Atlas and widen participation in communications and early warning initiatives. |
| DNA – Water Affairs | Collaboration with DNA has included participation in the radio workshop. Future areas for collaboration to strengthen the flood early warning systems, as identified in the SEED report, are likely. |
| ARA-SUL | Collaboration planned through USGS hydrologist working with MIND. Delays in setting up USGS office at ARA-SUL have limited collaboration to date. |
| SADC Regional Remote Sensing Unit | RRSU active member of Atlas Advisory committee; MIND funded RRSU participation in first Atlas meeting; collaboration on Journalist training course expected. |
| FEWS NET Regional Office in Harare | Active participation in MIND work planning; active participation in Atlas project; assistance with ensuring regional linkages made between MIND activities and regional initiatives especially within SADC. |

| Other partnerships (regional, future, etc.) | Activity |
|---|---|
| Mudsprings Geographers, Inc. | Initial collaboration between MIND and Mudsprings on Atlas project will lead to development of a formal sub-contract for creation of a digital and analytical version of the Atlas. |
| Nordic SADC Centre for Journalists Training (NSJ) | Agreement for NSJ to provide disaster-related training course to group of Mozambican journalists under development. |
| FAO Regional Office | Active member of Atlas Advisory committee. |
| Catholic University of Beira, CIDDEN | Exploratory meetings held in Beira and Maputo to investigate collaborative possibilities; MIND hosted CIDDEN presentation in Maputo. |
| South Africa National Disaster Management Center | Collaboration initiated with the help of USAID/South Africa and the RRSU. Consultations planned for October in Pretoria to identify areas for possible collaboration. |

Problems Encountered/Remedial Actions Taken

There are inherent difficulties starting-up a new activity in Mozambique, coordinating and managing three separate Task Orders and operating two separate offices. However, relatively few serious problems have been encountered during the first six months of the MIND. A few of the notable issues are highlighted below, and outstanding issues are written in *italics*:

- Unclear linkages between the three FEWS NET Task Orders operating in Mozambique (TO1, TO3 and TO803 - MIND). It had been expected that MIND would start shortly after the centrally-funded Mozambique Cyclone and Flood Early Warning Task Order (TO3) since the objectives were overlapping. However, TO3 started in October 2000, nearly six months before the MIND. This led to some inefficiencies as the two TO's had been expected to work closely together. Immediately after the start-up of MIND, USAID/Mozambique advised that TO3 activities should be transitioned into MIND activities as soon as possible. This was successfully completed within this reporting period and joint work plans were produced from the start. The TO3 Communications Specialist officially becomes a MIND staff member as of 1 October 2001. Linkages between MIND and TO1 have not created significant difficulties to date, as the objectives are quite different and funding sources are still different. *The merger of TO1 into MIND in January 2002 will need careful planning and monitoring to make sure no problems emerge.*
- Late start-up of related USGS activity. Due to delays in finalizing the PASA between USGS and USAID, the USGS hydrologist was not present in Mozambique during the first MIND work plan development and during the start-up phase. This made it difficult to plan areas of collaboration since the final scope and starting date of the USGS activity were unclear.
- No institutional base/permanent office for USGS advisor. The USGS advisor has not moved into his planned permanent office space at ARA-SUL as of the end of September 2001. This has delayed technical collaboration within the water sector. Office space may soon be a constraint at the MIND office with the three interns and the planned three-month technical consultancy for the Atlas, although it is hoped that the ARA-SUL space will be available in October. *USGS and USAID are working with ARA-SUL to resolve this problem.*
- Unclear relationship between MIND/Chemonics and MIND/USGS activity. The technical and administrative/financial linkages between Chemonics and USGS activities were not clearly defined in either the Chemonics Task Order or the USGS PASA. Steps are being taken to clarify the administrative and financial linkages between the two activities. *Chemonics will ask USAID to approve the allocation of \$200,000 in "unspecified equipment" in the Chemonics budget for recurrent/other direct costs and equipment for USGS and its partners.* On the technical side, coordinated work planning is difficult because the Objectives in the MIND Task Order are not included in the USGS PASA. A joint work planning session was

done in August, and the attached work plan includes USGS activities. USAID may modify one or both contracts to show the technical and administrative linkages, if required.

- Difficulty in operating two offices. FEWS NET chose to maintain the TO1 office at the Ministry of Agriculture and Rural Development when the new MIND office was established. This decision was taken because we did not want to reduce the level of collaboration that exists between the TO1 Country Representative and the Ministry. When the MIND activity ends, it is expected that TO1 will continue so the partnership with MADR is essential. MIND chose to place a Vulnerability Specialist in the MADR office, to encourage collaboration with the VA group. We still believe two offices will serve FEWS NET best in the long run, despite the logistical difficulties created in the short run.

Upcoming Activities

A draft MIND work plan for the period from October-December 2001 is attached here. This is a consolidation of the individual work plans of each technical staff member. We chose to complete only a three-month work plan at this stage to coordinate our work planning with the Task Order 1 work planning process, which runs on a calendar year basis. In January, we will submit a work plan for the duration of the MIND activity.

Summary of Documents Prepared

The table below is a summary of important documents prepared under this Task Order during the first six months. Copies of each document are included in a separate binder provided to the CTO.

| No. | Document | Prepared by | Date |
|-----|---|-------------|----------------|
| 1 | MIND Activity Work Plan, May-Oct 2001 | MIND | May 2001 |
| 2 | Diagrams of Flood and Cyclone Early Warning Systems | MIND | May 2001 |
| 3 | Fixed Price Contract with ARPAC | MIND | June 2001 |
| 4 | Fixed Price Contract with SEED | MIND | June 2001 |
| 5 | Summary of Proceedings: Workshop on the Role of Radio In Early Warning, Disaster Preparedness and Response In Mozambique | MIND | July 2001 |
| 6 | Sumário dos Procedimentos: Seminário Sobre O Papel Da Rádio No Aviso Prévio, Preparação Para As Calamidades E Respostas Em Moçambique | MIND | July 2001 |
| 7 | Proposed Procurement Of Freeplay Wind-Up Radios: Approval to USAID | MIND | July 2001 |
| 8 | O Sistema de Alerta Sobre As Calamidades Naturais em Mocambique: O Caso das Cheias 2000 | ARPAC | August 2001 |
| 9 | The Warning System On Natural Calamities In Mozambique: <i>The case of the 2000 Floods</i> | ARPAC | August 2001 |
| 10 | Data tables from the "Survey on the Socio-Cultural Dimensions of the Floods" | ARPAC | August 2001 |
| 11 | Freeplay: Guião para orientação, Distribution Plan, Acordo Sobre a Utilização dos Rádios Freeplay | MIND | September 2001 |
| 12 | Freeplay: User instructions in six Mozambican languages | ICS | September 2001 |
| 13 | Trip report for Study Tour to Cahora Bassa and SARCOF | MIND | September 2001 |
| 14 | Seven articles in <i>Noticias</i> about the SARCOF meeting and the rainfall forecast, resulting from MIND study tour | Noticias | September 2001 |
| 15 | Flood and Cyclone Warning in Mozambique: Description and Assessment for Needs | SEED | September 2001 |
| 16 | Design Document and Short Description: "Atlas for Disaster Preparedness and Response in the Limpopo Basin" | MIND | September 2001 |
| 17 | Advisory Team Meeting Summary: Atlas for Disaster | MIND | September 2001 |

| No. | Document | Prepared by | Date |
|-----|--|-------------|----------------|
| | Preparedness and Response in the Limpopo Basin | | |
| 18 | Vulnerability Baseline Profile: Upper Limpopo Food Economy Zone | MIND | September 2001 |
| 19 | Translations of Vulnerability Assessment guidelines to Portuguese (Guidelines for Analysis, Mini-Manual, Introduction to Food Economy, Spreadsheet Analysis) | MIND | September 2001 |

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Annex 1: Work Plan for October-December 2001

| Objective 1. Strengthen Weak Early Warning System and Communications System for Flooding and Cyclones | | | | |
|---|------------------|---|--|---|
| Activity | Timing | Staffing & LOE | Expected Result (Work Plan Period) | Expected Result (Life of Project) |
| 1.1. Monitor progress toward creation of National Flood Coordination Unit (GNCC) | ongoing | FCIS – 1 week | Feasibility of GNCC assessed; future support from MIND defined. | GNCC could increase coordination of flood related information between DNA, INAM and INGC (if political will exists on all sides). |
| 1.2. Encourage creation of a cyclone classification system in Mozambique | ongoing | FCIS – 2 weeks | Steps to create cyclone classification system for communicating warnings identified; best practices highlighted. | Better understanding of cyclone warnings by public. Technical terminology substituted with simple classification system. Dissemination of new classification system underway. |
| 1.3. Work with technical agencies to improve presentation of technical information on floods and cyclones during this rainy season. | ongoing | FCIS – 2 week NCS – 1 week UH – 2 weeks | Examples of improved analysis and presentation of technical data (maps, graphics) developed with partners. | Users understanding of technical data on floods and cyclones improved due to clearer presentation of data. |
| 1.4. Distribute Freeplay radios | October | FCIS – 1.5 weeks NCS – 1.5 weeks STAC - .5 week | 1500 radios distributed to vulnerable villages before onset of rainy season. | Access to warnings on floods and cyclones improved. |
| 1.5. Evaluate Freeplay radio distribution; work with partners to assess new opportunities. | November | NCS – 1 week STAC - .5 week | Initial assessment of impact of radio distribution carried out. | Lessons learned for future radio distribution; impact documented. |
| 1.6. Organize training courses for Freeplay technicians – training of trainers in Maputo, plus three Provincial workshops | November | FCIS – 2 weeks | Training of trainers and three Provincial workshops completed. | Freeplay radio maintenance guaranteed in all areas where radios distributed. |
| 1.7. Organize journalists training course on disaster issues with NSJ (and potentially a regional workshop with DMC) | November | NCS – 1.5 weeks | Course for journalists completed. | Media better able to communicate disaster related issues to the public. |
| 1.8. Set up and initiate training on FEWS Stream Flow Model at ARA-SUL | October-December | UH – 4 weeks | Model running at ARA-SUL. | ARA-SUL able to operate and maintain model. |
| 1.9. Train INAM staff on use of satellite derived rainfall estimates | October-December | UH – 2 weeks | INAM staff develops skills in creation of RFE. | INAM able to produce satellite derived RFE. |

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| Objective 2. Improve Decision-Maker Access to Integrated Data, Analyses and Decision Structures for Decision Support | | | | |
|---|---------------|---|--|---|
| Activity | Timing | Staffing & LOE | Expected Result (Work Plan Period) | Expected Result (Life of Project) |
| 2.1. Define priorities and begin data collection for the "Atlas for Disaster Preparedness in the Limpopo Basin;" finalize agreement with UEM and Mudsprings; procure equipment; hold advisory group meetings as required. | Ongoing | STDIS – 10 weeks STAC – 2 weeks NCS – 2 weeks FCIS – 2 weeks VAS – 2 weeks UH – 2 weeks (interns) | Work plan for Atlas data collection will be developed and implementation started. | An "Atlas for Disaster Preparedness in the Limpopo Basin" will be produced in hard and digital copy, meeting the needs of decision-makers for information during emergencies. |
| 2.2. Survey users of USGS flood website | November | FCIS – .5 week STDM – 2 weeks | A written assessment of USGS flood website will be provided to USAID. | USGS flood website improved, or merged with another website |
| 2.3. Take group of decision-makers visit from disaster management and media to Cahora Bassa (and possibly Kariba) dam | November | NCS - .5 weeks STAC – 1 week | Decision-makers understanding of dam management and actions during disasters improved. | Gaps in decision-makers understanding of information on floods filled. |

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| Objective 3. Fill Critical Gaps in Hazard, Vulnerability and Resource Information | | | | |
|---|-------------------|--------------------------------|--|--|
| Activity | Timing | Staffing & LOE | Expected Result (Work Plan Period) | Expected Result (Life of Project) |
| 3.1. Organize and carry out three food economy zoning workshops – south, center and north, with VA Group partners. Produce reports on outcome. | October | VAS – 4 weeks NCS - .5 week | Three workshops successfully carried out; zoning completed and disseminated for entire country; priorities for further baseline work agreed by VA Group. | Better understanding of food economies in Mozambique increase comprehension of vulnerability status of households. |
| 3.2. Conduct baseline VA of littoral zone of Limpopo Basin. Produce and disseminate profile of region. | November | VAS – 4 weeks | VAS and VA Group complete another portion of Limpopo Basin VA baseline. | Baseline VA completed for disaster prone portions of Limpopo Basin; information presented in Atlas to assist decision-makers during emergencies. |
| 3.3. Consolidate assessments of hazards (MIND, INGC, others) to produce historical analysis and maps of level of flood, cyclone and drought risk. | November-December | FCIS – 1 week NCS – 1 week | Hazard (risk) assessment for major disasters completed and disseminated. | Hazard risk maps and information widely available. |

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| Objective 4. Prioritize Contingency Planning for Preparedness and Response as well as Preparedness Planning and Mitigation | | | | |
|---|---------------|---------------------------|--|---|
| Activity | Timing | Staffing & LOE | Expected Result (Work Plan Period) | Expected Result (Life of Project) |
| 4.1. Provide FEWS NET input into Mission Disaster Relief Plan. | October | STAC - .5 week | Input provided to USAID. | Mission Disaster Relief Plan includes information on MIND and FEWSNET activities. |
| 4.2. Participate in contingency and response plans for the 2001/2 rainy season. | Ongoing | STAC | Input provided to contingency plans as requested (USAID, UN, Government, others) | Improved contingency planning at all levels. |
| 4.3. Assist USAID and other partners with preparedness and response plans during the 2001/02 rainy season. | Ongoing | STAC UH | Input provided to USAID and others as rainy season progresses. | Information for disaster preparedness and response improves. |

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| Objective 5. Strengthen Mozambican Capacity in Flood and Cyclone Early Warning and Decision Support Systems, Vulnerability Assessment and Contingency Planning | | | | |
|--|--|--|---|--|
| Activity | Main Partner | Lead Staff (LOE included in Objectives 1-4) | Expected Result (Work Plan Period) | Expected Result (Life of Project) |
| 5.1. Work with hydrology and meteorology services to improve data and coordination for flood and cyclone early warning system. | INAM ARAs DNA | FCIS | Efforts to improve quality and coordination of hydrological and meteorological data determined. | Hydrology and meteorology departments produce better and more coordinated data for disaster preparedness and management. |
| 5.2. Work with Radio Mozambique, Provincial radios, community radios, and other media to improve their contribution to flood and disaster early warning. | Radio Mozambique; ICS, newspapers | NCS | Journalists understand more about disaster topics. | Media able to communicate critical information to help people respond to flood and cyclone threats. |
| 5.3. Improve the Mozambican public's understanding of floods, cyclones, dam operations, etc. through development of simple categories, scales and educational materials. | Radios, NGOs, communities, technical agencies, INGC | NCS | Plan to improve communication of warnings developed. | Public understands warnings of floods, cyclones, dam releases improved; public able to take necessary action to preserve lives and livelihoods. |
| 5.4. Work with partners to produce Disaster Preparedness Atlas | UEM, INGC, others local, regional and international institutions | all | Atlas production started. | Atlas completed and released in digital and hard copy; Process of producing Atlas increases capacity of local institutions; sustainability enhanced by creation of markets for products. |
| 5.5. Work with VA Group on baseline vulnerability assessments | MADR + VA Group | VAS | VA group understanding of food economy approach increases. | VA Group makes a substantive contribution to early warning and vulnerability assessment in Mozambique. |
| 5.6. Work with interns from the University of Eduardo Mondlane on GIS concepts. | UEM | UH | Interns gain practical experience in GIS and contribute to MIND. | Mozambican expertise in applying GIS to disaster issues increased. |

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