



Annex A

Case study: Floods and cyclones in Mozambique, 2000

In January and February 2000 prolonged heavy rains and the cyclones Connie and Eline caused catastrophic flooding in Mozambique's Gaza, Inhambane, Manica, Maputo and Sofala provinces. An estimated 2 million people were affected, 544 000 were displaced and 699 were killed. The World Bank estimated the economic damage caused by the floods and cyclones to be approximately 20 per cent of the country's gross national product.¹ Mozambique's recently created disaster management structure was quickly overwhelmed by the scale of the humanitarian crisis. A major international assistance effort included foreign military assets from 11 countries. These countries eventually allowed their assets to be under United Nations coordination to an unprecedented degree. It was the first time that the concept of a Joint Logistics Operation Centre to manage and coordinate air assets was applied in a natural disaster response. Another similar bout of flooding in the country in 2007 provides a useful comparison of the responses and some indication of how, and how far, the lessons of 2000 have been applied.

Background

The disaster

Mozambique experiences an annual rainy season from October to March. The amount of rain that fell in the 1999–2000 rainy season was the largest in over half a century, and the subsequent flooding in 2000 reached record-breaking levels. The Limpopo river experienced its worst flooding since at least 1848, and the floods along the Incomáti river were the worst in a century or more. This record rainfall and flooding were the result of a very unusual weather pattern. Windstorms moved unusually slowly, dropping large amounts of rain and moved inland instead of up the coast. The disaster that affected Mozambique was thus a culmination of a series of events. In December 1999 the heavy rains in southern Mozambique were almost triple the average level for Maputo and 25 per cent above that which is normal for Xai Xai city in Gaza province. In January intense rain occurred throughout southern Africa, affecting northern South Africa, eastern Botswana, south-east Zimbabwe and Swaziland. This caused the first wave of flooding, as the Limpopo, Incomáti and Umbeluzi rivers rose between 17 and 23 January.

¹ Cosgrave, J. et al., 'Inter-agency real-time evaluation of the response to the February 2007 floods and cyclone in Mozambique', Draft final version, UN Inter-Agency Standing Committee, May 2007.

The regional heavy rains continued in the first week of February, becoming even heavier when cyclone Connie struck central and southern Mozambique on 4–7 February. The movement of the cyclone southwards towards South Africa caused the Incomáti to rise upstream. Approximately 100 000 people in Mozambique were displaced and 200 000 were affected by the resulting second wave of flooding. On 22 February cyclone Eline hit central Mozambique and caused heavy rainfall in Gaza province. As the ground in the region was already saturated, it was not able to absorb the additional water, which quickly ran off into the river systems. Cyclone Eline caused an unexpected additional flood crest on the Limpopo, which is 60 kilometres wide at its widest point, and inundated areas that were normally viewed as safe high ground. The rainfall from cyclone Connie at the headwaters of the Limpopo reached Mozambique about the same time as cyclone Eline struck the country. The combined crest hit Chókwè city in Gaza province on 27 February and Xai Xai on 1 March and caused a third wave of flooding, in which water levels reached more than 3 metres above that of the previous record flood of 1977. The floodwaters covered 30 000 square km and caused the Incomáti and Limpopo rivers to merge for the first time in history. A third cyclone, Glória—downgraded to a tropical storm by the time it reached Mozambique—brought even more rain to central Mozambique on 5–8 March. Countries upstream opening their dams adding significantly to the volume of water flowing into Mozambique.

The floods severely damaged the main road and railway connections between the affected cities, making some of the cities, including like Chókwè and Xai Xai, virtually inaccessible. The floods affected 12 per cent of the population of Mozambique—approximately 2 million people in five provinces, of whom half a million were displaced and placed in over 100 temporary shelters.²

Mozambique in 2000

Mozambique was ranked number 169 out of 174 on the UN's 1999 Human Development Index and in 2000 was still recovering from a protracted civil conflict that had ended eight years earlier. The government, re-elected in 1999, focused its efforts and resources on rebuilding state structures and on economic growth. Even though Mozambique already frequently suffered drought, floods and cyclones, disaster management was not a high priority on the national agenda at the time. UN agencies in Mozambique had also slowly begun to switch from primarily humanitarian relief activities to longer-term development activities since the peace agreement. The UN had downsized and then dismantled the emergency information and management system it had set up through the offices of the former UN Special Coordinator of Emergency Relief Operations. UN operational agencies had also reduced their field presence in Mozambique. Those involved in the 2000 relief operation said that this partly explained a lack of preparedness for the disaster.

² United Nations, Assistance to Mozambique following the devastating floods: Report of the Secretary-General, UN document A/55/123-E/2000/89, 11 July 2000, para. 4.

Existing domestic disaster management structures

At the time of the floods, Mozambique's new disaster management structure had been in place for only a few months. In July 1999, the National Institute for Disaster Management (Instituto Nacional de Gestão de Calamidades, INGC) was established under the Ministry for Foreign Affairs and Cooperation, with offices at the provincial level. It replaced the Department for the Prevention and Combat of Natural Disasters (Departamento de Prevenção e Combate às Calamidades Naturais, DPCCN). Two other entities were created at the same time: the Coordinating Council for Disaster Management (Conselho Coordenador de Gestão de Calamidades, CCGC) at the political level and the Disaster Management Technical Council (CTGC) at the operational level. The CCGC, chaired by the prime minister and including 10 other ministers, was responsible for managing policy decisions relating to disaster management. The CTGC was created to support the INGC. Its members represented 10 ministries and the UN's World Food Programme. Its role was to coordinate sectoral and ministry early-warning systems for disasters. The intention was for it to meet every three months.

One of the INGC's first tasks was to draw up contingency plans for the 1999–2000 rainy season. The plan outlined three possible scenarios, the most extreme of which included cyclones and heavy rain. The plan estimated that 93 000 people in Gaza province could be affected, of whom 23 000 would require assistance. It proposed modest resources to address flooding: 20 boats and 240 lifejackets for search-and-rescue operations, and basic relief items (food supplies, tents and blankets) for those affected by the disaster. The plan was supposed to be based on provincial plans and the relief efforts for the February 1999 flood in Inhambane province. In practice, CTGC and INGC representatives did not work with the provincial authorities. Thus, the true conditions in each province were not accurately reflected in the plan, nor were available resources matched to what would be needed for an appropriate response.

In addition to creating a contingency plan, the INGC held two national workshops and several training and simulation exercises in the autumn of 1999 with the support of the WFP and the UN Development Programme. The aim of the exercises was to strengthen the technical capacities of the fire brigade, the police, the Mozambique Red Cross (Cruz Vermelha de Moçambique, CVM), Boy Scouts and several religious civil society organizations, as well as to promote coordination during actual disaster relief operations.

The response

The scale of the 2000 flooding emergency quickly overwhelmed the INGC's capacity and the Government of Mozambique requested international assistance. A massive international response was thus launched, involving over 2500 foreign civilian and military personnel from 100 NGOs and 11 national militaries. It is important to note that the domestic and international responses came in waves, with the largest influx of international (military and civilian) assistance arriving in early March, following the arrival of cyclone Eline. The response to the first wave of flooding, from late January on, was predominantly domestic, although some countries in the region provided assistance.

The first stage of the relief effort was jointly coordinated by the INGC and the WFP, with the CVM, Médecins Sans Frontières and other NGOs making important contributions. The search-and-rescue operations were conducted primarily by helicopters of the South African Air Force (SAAF), the Malawi Army Air Wing and the Mozambican Air Force and Navy.

Overall coordination

The exceptionally heavy rains in Maputo on 6 February triggered the initial large-scale governmental response. Foreign Minister Leonardo Simao called the first CCGC meetings to coordinate the government's response to the unfolding crisis. On 8 February OCHA offered the Mozambican Government the support of a UN Disaster Assessment and Coordination team, which the government accepted on 10 February. Several donors, including the US Agency for International Development (USAID), also initiated their own needs assessments to identify appropriate measures to assist the Mozambican Government.

Overall coordination of the relief operation was provided by the INGC with support from UNDAC teams. This took the form of daily briefings where all stakeholders reported on their activities. Many of the actors involved in the relief operation felt that the establishment of the On-Site Operations Coordination Centre (OSOCC) and, more critically, the fact that the centre was located in the INGC building enforced the notion that the UN played only a supporting role. However, there were other coordination meetings that took place concurrently which led to observations that no clear or cohesive picture was available about what was going on.

The first full UNDAC team arrived between 12 and 13 February. However there was some confusion as to the team's role. The government and the UN Resident Coordinator's Office assumed that OCHA had deployed the team to strengthen the INGC's capacity to deal with the floods associated with cyclone Connie. However, the team's brief from OCHA was primarily to further refine the government's initial 10 February appeal and to prepare a UN inter-agency appeal for funds, which was launched on 23 February. On 16 February, with the support of the UNDAC team, the INGC set up the OSOCC.³ The role of the OSOCC was to gather and disseminate information on the following functional sectors, which were under the responsibility of the relevant Mozambican line ministries, collaborating with international partners (listed in brackets): food (WFP), health (World Health Organization, WHO), transport, customs and communications (DfID), shelter and camp accommodation (IFRC), water and sanitation (UNICEF), and information (UN Development Programme, UNDP). The UN's ability to support the INGC in coordinating the disaster relief operation was hampered by the absence of a common humanitarian action plan (CHAP).

In addition, the premature departure of the UNDAC team contributed to a vacuum in the coordination structures during the relief operations. Despite the warnings of the impending arrival of cyclone Eline, the UNDAC team left Mozambique two days before the full impact of the cyclone hit Chókwè. In addition to their absence, several of the field

³ OCHA, 'Mozambique—floods: OCHA Situation report no. 7', 16 Feb. 2000.

UN leadership were also out of the country during that crucial weekend. In an unfortunate coincidence, the Mozambican foreign minister (who was overseeing the government's response) fell ill that weekend. These combined absences left a gap in the decision-making structures.

The decision to request and send foreign military assets

In mid-January the South African High Commission in Mozambique alerted the Mozambican Government to the possibility of serious flooding. The high commissioner also suggested that if Mozambique required helicopter support assistance from the South African National Defence Force (SANDF)—with which Mozambique had previously cooperated—a request should be made through South Africa's department of foreign affairs. In the interim, the high commissioner alerted the South African departments of Foreign Affairs and Defence to the fact that a request for foreign military assets could be forthcoming. Accordingly, a budget of 4.2 million rand was earmarked to finance the anticipated airlift and airborne search-and-rescue operations. On 8 February the Government of Mozambique made a formal request for assistance to the Government of South Africa. The next day, the SANDF sent in a needs assessment team to meet with the INGC and relevant ministerial officials and to assess the type of support needed. Within two days, on 11 February, South Africa deployed a fleet of six helicopters and four fixed-wing aircraft to Maputo.

South Africa was the only country from which Mozambique specifically requested military assets. Most of the military assets provided by the other 10 countries were sent to address humanitarian needs identified by Mozambique or the countries' own assessment teams. However, several of those interviewed for this study observed that the provisions of foreign humanitarian assistance, including military assets, was very much supply driven and there were evidently other motivations behind some governments' offers. For instance, the Spanish deployment of three helicopters was thought to be motivated, at least in part, by the good training opportunity it presented to familiarize the pilots with newly procured aircraft in a safe environment.⁴ Other governments were responding to domestic constituencies' desire to 'do something' at least as much as any humanitarian need. The INGC was not prepared for the onslaught of international assistance. According to one interviewee, various foreign military and international NGOs gave the INGC virtually no indication of what assistance they would provide or when it might arrive. This contributed considerably to the poor coordination on the ground.

The media seem to have played a crucial role in influencing countries' decisions to contribute military assets. Observers noted that, prior to the multiple emergencies in Mozambique in 2000, very few disasters had received media coverage comparable to that given the second phase of flooding of the Limpopo valley, which was associated with the full impact of cyclone Connie. International television crews, already present to cover the earlier flooding, transmitted dramatic pictures of people clinging to trees and rooftops and being winched to safety by helicopter crews. According to a British official who was involved in the disaster response, following the media coverage governments wished to offer help as a 'goodwill gesture'.

⁴ Former JLOC officer involved in the 2000 disaster response, interview.

Political considerations also came into play for some of the contributing countries. According to a member of the US humanitarian assistance survey team (HAST):

A humanitarian joint task force like this is political. . . . The US is trying to build relations with South Africa, and Defense Secretary [William] Cohen was in South Africa [at the time of the floods], and Cohen offered help [to South Africa, which was also experiencing floods]. But South Africa said it would be better to go to Mozambique. And we [the HAST] arrived there on 18 February.

It is worth noting that while the decision to send the HAST was arguably political, the US deployment of military assets was, in fact, in response to real assessed needs. The HAST's initial assessment was that US military assets would add little value to the existing efforts. The team was preparing to depart on 24 February but stayed in the country, at the urging of the US ambassador in Maputo, in order to determine the full impact of cyclone Eline. It was only after the team issued a new assessment, identifying a need for US military air assets, that the USA sent helicopters and C-130 Hercules aircraft.

Foreign military assets in the response

Because the main roads were made inaccessible, a large portion of the disaster relief assistance during the floods was conducted by air. Thus, the most common type of foreign military assets deployed in 2000 were fixed-wing aircraft and helicopters for transporting relief personnel to the affected areas and relief goods to the affected population and for conducting search-and-rescue operations. At the height of the operation, 56 foreign aircraft and over 1000 foreign military personnel were deployed. Table A.1 gives a list of foreign military assets participating in the response. The rest of this section examines the role played by foreign military assets in the response.

Timeliness

South Africa's military assets—mainly fixed-wing aircraft and helicopters—were the first to arrive in Mozambique, in early February, followed shortly afterwards by French and Malawian air assets. The majority of other foreign military assets arrived only in early March, after the third wave of flooding in Chókwè. Thus, only the South African and Malawian helicopters were available in time to participate in search-and-rescue operations, the South Africans in and around Chókwè and the Malawians in Beira, Sofala province. However, it is not clear that the lack of availability of other foreign military helicopters at this crucial time was a problem. The South African helicopters were able to rescue a total of 14 391 people. A British official interviewed observed that 'leaving it in the hands of one nation [South Africa] was probably ideal as the presence of other helicopters would have crowded the air space and posed some danger. Additionally, the South Africans were most familiar with the terrain.' The remaining air assets that arrived in the first week of March were deployed in time to take part in the lengthy relief phase.

By early March, the airport in Maputo was managing four times the normal number of landings and take-offs and nearly 10 times the normal volume of cargo. A bottleneck quickly developed due to delays in handling administrative issues such as landing fees of the foreign military air assets and customs declarations for relief items meant that several foreign military assets were not able to start operations in a timely manner.

Efficiency

Several measures instituted by foreign military assets were particularly helpful in ensuring the efficient use of (domestic and foreign) air assets. The creation of an emergency airstrip near Palmeira, situated midway between Maputo and Xai Xai, was particularly helpful as it reduced the number of flying hours and distances. More importantly, it helped to relieve congestion at Maputo airport. The establishment of the forward airbase at Manica allowed an efficient way to provide relief to Chókwè: items were delivered by road to Manica and then flown to the Chókwè region.

Potential humanitarian need also influenced the use of military assets already deployed to Mozambique. When the warnings for cyclone Eline were given, the South African Air Force cut back its flying hours late in that week to save hours and fuel for the rescues it expected to make the following week.

A number of military logistical techniques also increased efficiency. These included the use of oil bladders, which hold large quantities of fuel, together with the Canadian Buffalo aircraft, which had refuelling capability, meaning that aircraft did not need to carry spare fuel in oil drums and thus leaving more room for relief items to be transported to the affected population.

One critical factor that threatened to affect not only the efficiency but also the effectiveness of the disaster relief operation was the unavailability of fuel for the South African air assets. South Africa had indicated that it had only limited amounts of funds available to sustain the air support operation and that the cost of fuel needed to be borne by the international community. There were several occasions when the South African fleet was on the verge of withdrawing. This was ultimately resolved by offers from several donor countries to cover the cost of fuel for the South African helicopters.

With approximately 700 personnel and a fleet of 10 aircraft, the USA had the largest military presence during the disaster relief operation. However, whether the military assets operated efficiently and whether they were optimally utilized within the larger relief effort was called into question by a number of observers. For instance, the US Air Force decided against parking its aircraft at the military base at Maputo airport and instead chose to remain based in Hoedspruit, South Africa, for the entire duration of the relief operation as part of their force protection measures.⁵ This reduced the number of sorties and the coverage of the US helicopters because they had longer distances to travel. It was also reported that the load capacity of the US helicopters was significantly reduced because they were heavily armoured.

Similarly, the Spanish helicopter deployment was not able to operate at maximum efficiency because the pilots were still getting used to their aircraft.

Civil–military coordination

This flood had the largest number of military aircraft ever used in a coordinated way in a natural disaster.⁶

⁵ Mozambican Armed Forces official, interview.

⁶ Elmquist, M., 'Remarks', in F. Christie and J. Hanlon, *Mozambique and the Great Flood of 2000* (Indiana University Press: Bloomington, Ind., 2001).

Owing to the multiplicity of actors on the ground, the level of civil-military coordination was mixed. The greatest convergence of foreign military and civilian actors, as well as goods in Maputo, occurred during the first week of March. A number of interviewees pointed out that the Mozambican Government had no previous experience working with such a high number of international actors (be they military or humanitarian) and was not accustomed to the many and different operating procedures and reporting guidelines. Given that there was no effective domestic overall framework for coordination, other actors stepped in to fill the gap. The friction between the INGC and the Mozambican Armed Forces was seen by some as a contributing factor on the domestic front to the lack of overall stewardship of the relief operation. However, all those interviewed for this study responded that, despite the initial delays or problems, civil–military coordination during the relief effort functioned relatively smoothly.

The coordination unit of the Mozambican Armed Forces, the most logical domestic agency to take responsibility for coordination foreign military assets, was largely sidelined, in part because it lacked manpower; the unit had only three staff to coordinate effectively the many military assets coming from different countries. The members of this unit thought that the foreign contingents were reluctant to have their air assets coordinated by the Mozambican Armed Forces because the Mozambican Air Force itself contributed no air assets for the relief operation.⁷ Thus, leadership and coordination of the air operation out of Maputo was assumed by the SAAF, which had assisted the Mozambican Government in previous floods in 1996, 1997 and 1999 and thus knew the terrain well. More importantly, the SAAF task force commander had good relations with key Mozambican Government officials. Thus, daily meetings to coordinate the movement of air assets were chaired by the SAAF and coordinated with the domestic civilian air authority as regards air traffic control. As other contributing countries arrived with their military assets, they were integrated into the South African-led command-and-control structure. The other countries' militaries readily accepted South African leadership, perhaps because it is a regional actor with a well-respected military.

On 5 March, after the third flood, the Cell for Logistics Co-ordination was converted into a fully fledged Joint Logistics Operation Centre (JLOC) to manage and coordinate air assets, with the South African Air Force task commander in charge. This was the first time that the JLOC concept had been applied in a natural disaster response. Its use was the result of lessons learned from earlier complex emergency operations that involved the use of military assets. Interestingly, the UN's authority to plan and decide on priorities was initially questioned by some of the military units, in particular those of Germany and the USA, which did not readily accept the humanitarian coordination role of the UN. This problem was eventually overcome and, for the first time ever, foreign military assets were placed under civilian coordination in a natural disaster relief operation. The willingness to try new coordination set-ups was perhaps a result of earlier experience. As an OCHA official observed, 'In Hurricane Mitch there had been more military aircraft [than in Mozambique in 2000], but . . . each country went in and did its own operation. This proved to be inefficient, and many countries agreed to be more coordinated in future.'⁸

⁷ Mozambican Armed Forces official, interview.

⁸ Elmquist (note 6).

However, a separate civil and military operations centre (CMOC) for British and US military assets was set up in the INGC building. British individuals interviewed for the study contend that setting up the CMOC was necessary because it was up to each country to ‘handle and control [its own] air assets’, particularly if the country contributed a significant number of aircraft, while the role of the JLOC was to coordinate only. Other countries contributing military assets thought that these structures duplicated the work of the JLOC.

Another example of civil–military coordination that worked well occurred in water-based operations. Although air assets were vital to the disaster response, boats were also extensively used to rescue people in the Save Valley. They were perhaps more appropriate for transporting relief supplies to isolated groups and for simply ferrying people across breaks in or washed-out sections of roads caused by the continuing floods. The Netherlands dispatched 50 rubber dinghies manned by 10 military instructor-operators. A UK-based civilian organization, the Royal National Lifeboat Institute, sent a fleet of boats and a team of personnel. Both these civilian and military deployments worked alongside the Mozambican Navy. In the lessons learned session, it was suggested that, in future disaster relief operations, other common assets—such as boats, tents and warehousing—might be placed under the JLOC’s mandate in order to coordinate their deployment and use.⁹

Coordination in Beira, the other main area of operation, and in other provinces was not as good as that in Maputo. This was due to the fact that the INGC presence outside Maputo was weak. For example, in Beira the INGC asked the WFP to take on the overall coordination role, and the INGC was only occasionally represented at coordination meetings.¹⁰ However, logistic and air asset coordination reportedly functioned relatively well because the JLOC model employed in Maputo was also adopted in Beira to serve the Buzi and Save areas.

Key findings from the 2000 flood response

An evaluation workshop was held in June 2000 to review the 2000 flood response in Mozambique and identify issues that required further discussion, clarification and policy guidance. Its findings were as follows.

- The national capacity for disaster management needed strengthening. Division of roles and responsibilities between the different departments and ministries needed to be clarified.
- Disaster preparedness, contingency plans (including preposition of assets) and risk mitigation efforts needed to be developed.
- The Mozambican armed forces have an important role to play in national disaster management.

⁹ UN System in Mozambique, ‘Final report: review of the lessons learned in the response to the flood emergency in Mozambique’, 9 Sep. 2000.

¹⁰ UN System in Mozambique (note 9).

- It is important to first exhaust all domestic (civilian and military) resources before requesting foreign military assets.
- Overall coordination of the disaster relief assistance was considered a success, in particular, the unprecedented manner in which foreign militaries allowed themselves to be coordinated by the UN.

Lessons learned: the floods and cyclone in 2007

In February 2007 Mozambique was again afflicted by serious floods caused by heavy rains, quickly followed by the arrival of a cyclone, Favio, and exacerbated by the discharge of the Cahora Bassa dam in Tete province. The Zambezi river basin—the fourth largest in Africa—flooded and some 285 000 people in Inhambane, Manica, Sofala, Tete and Zambézia provinces were affected and 114 000 displaced. The economic damage was assessed at \$71 million. Although the impact of the February 2007 events was smaller than that in 2000, the INGC reported that the disaster in 2007 had the potential to have impacts on the same scale as those in 2001, which killed 81 and displaced over 155 000 people.¹¹

Several important lessons were drawn from the 2000 and 2001 experiences that affected how the INGC operated and managed the 2007 disaster. The use of foreign military assets was not considered a sensitive issue for the INGC, several domestic humanitarian organizations and even some of the UN operational agencies—it was felt that a pragmatic view should be adopted.

Strengthened domestic disaster management structures

Since 2000, policies, legislation and structured operating procedures regarding disaster risk reduction and disaster management have been put in place or are underway. In 2006 a new head was appointed to lead the INGC, and the coordination role of the agency was emphasized over its former operational role. During emergencies the INGC has a direct reporting line to the prime minister. The INGC built a number of regional centres for managing emergency operations. The operational response to emergencies is managed by the National Emergency Operations Centre (Centro Nacional Operativo de Emergência, CENOE). This is a component of the INGC. CENOE has several centres around the country that serve as the operations rooms for emergency response. The centre for the central region is in Caia. Another is located in Vilanculos for the south, and a third is planned for Angoche in the north. In an emergency, personnel drawn from the national level of the INGC and from the governments of the affected provinces staff the CENOE. One critical component of CENOE is that the UN operational agencies and other key humanitarian organizations are represented. Thus, in the event of an emergency, working relationships would have been regularized.

In addition, recognizing the important role that the Mozambican military can play, a military liaison officer is now permanently seconded to CENOE to ensure smoother inter-agency and civil—military cooperation. There is wide recognition that the domestic

¹¹ Cosgrave et al. (note 1).

military will continue to play a similar, and perhaps greater, role in future disaster relief operations. There is, thus, a strong imperative to involve the domestic military as early as possible and to sustain long-term relations between the INGC and the army. Joint training of individuals from the Ministry of Interior, the military, the INGC and the CVM has been organized to strengthen civil–military cooperation. The curricula include general training in first aid and information gathering as well as specialized training for the different natural disasters that occur in Mozambique—floods and cyclones, droughts, earthquakes and forest fires.

Using and coordinating foreign military assets

In 2007 the need to rely on foreign assistance, in particular foreign military assets, was greatly reduced due to the enhanced institutional capacity of the INGC in terms of disaster preparedness and effective contingency plans at the national, provincial and district levels. Much of the response was managed by the INGC, with limited airlift assistance from the South African Air Force. The SANDF contributed two fixed-wing aircraft and one helicopter to transport relief items to the affected areas. An innovative approach was adopted with regard to the command and control of the South African aircraft deployed. A retired general from the South African Air Force was seconded to the INGC and the WFP, which was the lead agency for logistics, to control and coordinate all air operations during the emergency. This prevented civil–military coordination problems during the 2007 emergency. In the words of a WFP official:

It was much cheaper for the UN to use the South African military air assets because it bore no cost to us, with the exception of fuel which was built into the CERF [United Nations Central Emergency Response Fund] application. Most importantly it was an approach that worked well and WFP would not hesitate to use the same approach again in Mozambique.¹²

Nevertheless, Mozambique still does not have a standard or formalized procedure for requesting foreign military assets. Instead personal and political ties between the heads of government of Mozambique and South Africa have been the driving force behind the deployment of military assets.

¹² WFP official, Maputo, interview.

Table A.1. Foreign military assets contributed to the disaster relief operations in Mozambique, 2000

This list of assets should not be taken as definitive.

Contributing countries	Asset type	Asset name	Asset quantity	Number of personnel	Type of support	Channelling date	Arrival date	Departure date	Location
South Africa	Fixed-wing aircraft	C-212 Aviocar	3	20	Air	Bilateral	11/02/00	02/05/00	Maputo
	Fixed-wing aircraft	Cessna Caravan	1		Air	Bilateral	11/02/00	02/05/00	Maputo
	Fixed-wing aircraft	Cessna Skywagon	1		Air	Bilateral	11/02/00	02/05/00	Maputo
	Fixed-wing aircraft	C-130 Hercules	1		Air	Bilateral	11/02/00	02/05/00	Maputo
	Helicopter	Oryx and BK 117	5	42	Search and rescue	Bilateral	11/02/00	02/05/00	Maputo
	Ground operation personnel			57	Support personnel	Bilateral	11/02/00	02/05/00	Maputo
France	Fixed-wing aircraft	C-160 Transall	2		Air	Bilateral	19/02/00	26/02/00	..
Malawi	Helicopter	SA-330 Puma	2		Search and rescue	Bilateral	22/02/00	05/04/00	Beira
	Helicopter	AS-350 Fenec	1		Search and rescue	Bilateral	22/02/00	05/04/00	Beira
France	Helicopter	SA-330 Puma	2		Air	Bilateral	02/03/00	12/03/00	Maputo
	Helicopter	SA-341 Gazelle	2		Air	Bilateral	02/03/00	12/03/00	Maputo
	Helicopter	A3	2		Air	Bilateral	02/03/00	12/03/00	Maputo
	Personnel			750		Bilateral			Maputo
UK	Helicopter	SA-330 Puma	4		Air	Bilateral	06/03/00	20/03/00	Maputo
	Helicopter	SH-3 Sea King	4		Air	Bilateral	06/03/00	20/03/00	Beira
Germany	Fixed-wing aircraft	C-160 Transall	2		Air	Bilateral	07/03/00	29/03/00	Beira
	Helicopter	Bo-105	4		Air	Bilateral	07/03/00	29/03/00	Beira
	Helicopter	SA-330 Puma	3		Air	Bilateral	07/03/00	29/03/00	Beira
	Helicopter	UH-1 Huey	4		Air	Bilateral	07/03/00	29/03/00	Beira
USA	Fixed-wing aircraft	C-130 Hercules	3		Air	Bilateral	09/03/00	27/03/00	Hoedspruit, South Africa
	Helicopter	HH-53	3		Air	Bilateral	09/03/00	27/03/00	Hoedspruit, South Africa
	Helicopter	HH-60 Pave Hawk	4		Air	Bilateral	09/03/00	27/03/00	Beira

Contributing countries	Asset type	Asset name	Asset quantity	Number of personnel	Type of support	Channelling	Arrival date	Departure date	Location
Spain	Helicopter	SA-330 Puma	2		Air	Bilateral	12/03/00	02/04/00	..
	Helicopter	AS-532 Cougar	1		Air	Bilateral	12/03/00	02/04/00	..
Portugal	Fixed-wing aircraft	C-130 Hercules	1		Air	Bilateral	20/03/00	03/04/00	..
Netherlands	Boats	Zodiac	50		Search and rescue	Bilateral

Source: List of main foreign military assets obtained from Governo De Moçambique, Balanco Final: Apelo de Emergência Face às Cheias, Outubro de 2000; documents obtained from the OCHA Financial Tracking System; F. Christie and J. Hanlon, *Mozambique and the Great Flood of 2000* (Indiana University Press: Bloomington, Ind., 2001); and data from contributing countries.