# THE EMPLOYMENT OF A HELICOPTER UNIT IN "OUT OF AREA" OPERATIONS. EXPERIENCES IN SOMALIA AND MOZAMBIQUE AND LESSON LEARNED.

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ITALIAN ARMY AVIATION

At the end of 1992, the Italian government decided to dispatch two ARMY AVIATION BATTALIONS including different types of helicopters and light planes (CH-47Cs, AB-205s, AB-412s, A-129s and SM-1019s). The two battalions were part of the Italian contingent engaged in typical peace keeping missions (RESTORE HOPE and UNOSOM-UNOMOZ).

Because of extreme weather conditions, distance from Italy and the number of aircraft involved, the task proved more difficult than other "out of area" operations. The main aspects of the operations were:

- helicopter deployment;
- helicopter roles;
- different weapons systems;
- helicopter performance in extreme weather conditions;
- first and second level maintenance;
- combat operations.

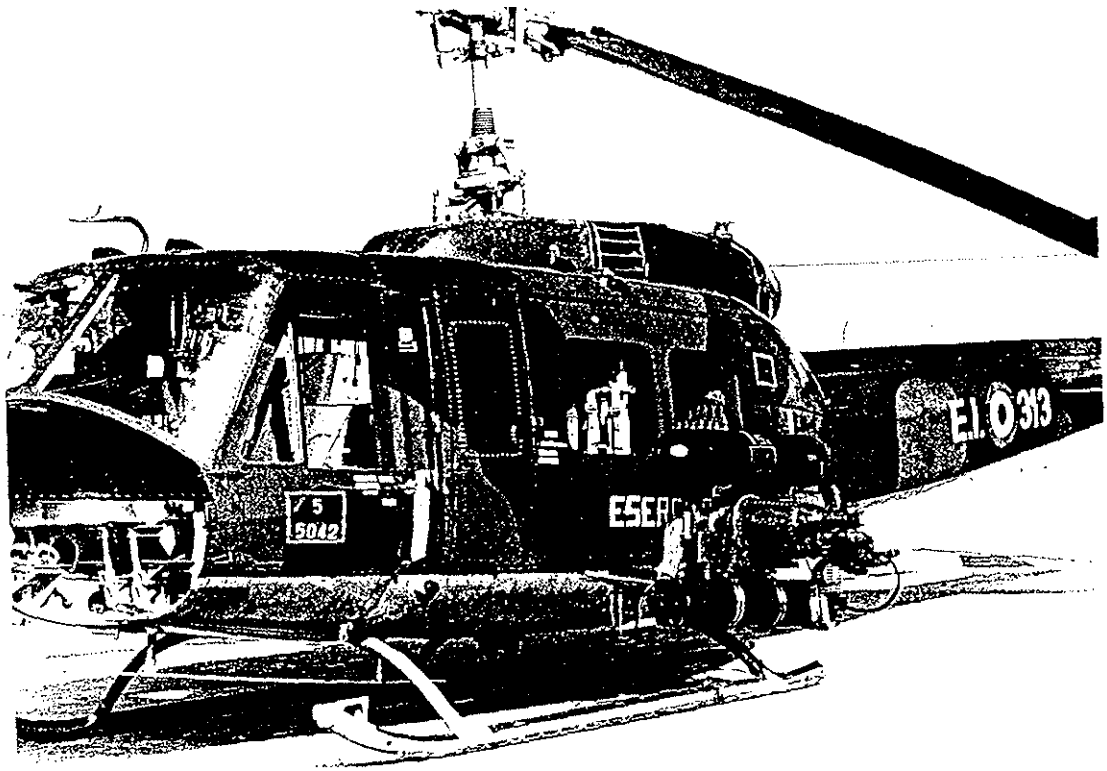
The lesson learned was that out of area operations must be conducted with a helicopter unit which allows for actual air-mobile actions.

## 1. PREMISE

The history of the Italian Army Aviation began with the Air Artillery Unit created in 1951 at the Artillery School in Bracciano. The porpouse was to provide the Army with "its own air-borne component" due to the experience accrued during World War II. The tasks entrusted to Army Aviation forces have grown gradually in function of the introduction of increasingly sophisticated helicopters and planes in numbers sufficient to ensure an adequate air-borne component. Among these tasks, the use of Army Aviation units as a part of the forces charged with rescue missions, peace-keeping and peace enforcement abroad bear special importance. Since 1979 in particular, Army Aviation units have been dispatched to LEBANON, NAMIBIA, KURDISTAN, ALBANIA, SOMALIA and MOZAMBIQUE. The missions in SOMALIA and MOZAMBIQUE were especially challenging on account of the elevated number of aircraft deployed, the large distance from logistical bases in Italy, difficult environmental conditions and, in the case of Somalia, frequent involvement in armed conflict.

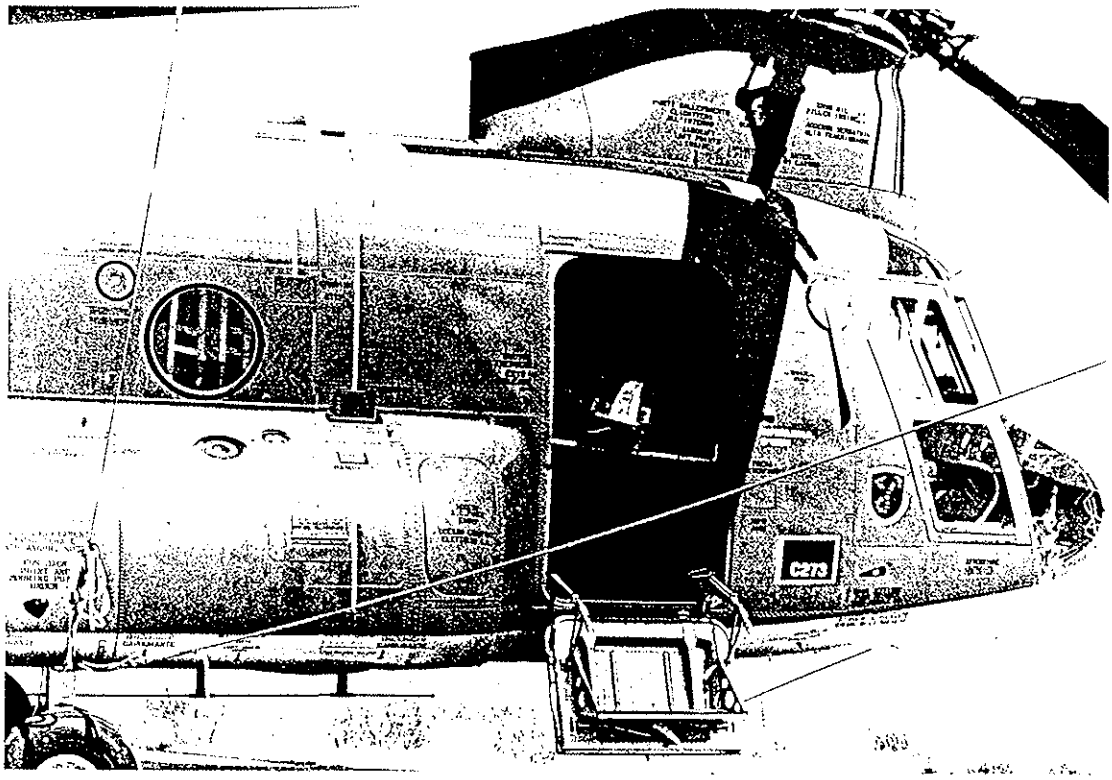
In particular, an Army Aviation battalion (ITALHELY IBIS) composed of 4 CH-47C CHINOOKS, 6 AB-205 IROQUOIS, 2 AB-412 GRIFFONS and 3 A-129 MONGOOSES helicopters was present in SOMALIA from December 1992 to March 1994 to provide support to the Italian IBIS I (RESTORE HOPE) and IBIS II (UNOSOM II) contingents. In February 1993, another battalion (ITALIA ALBATROS) composed of 3 CH-47C CHINOOKS, 4 AB-205 IROQUOIS and 3 SM-1019 light aircraft was sent to MOZAMBIQUE where it operated until April 1994 in support of the Italian ALBATROS contingent (in the framework of UNOMOZ).

A closer examination of the activities of IBIS and ALBATROS (both comprised of an elevated number of personnel and significant quantities of material on the Brigade/Division level) confirms the necessity to provide such contingents with helicopters in sufficient numbers and suitable for the tasks they are called to perform.



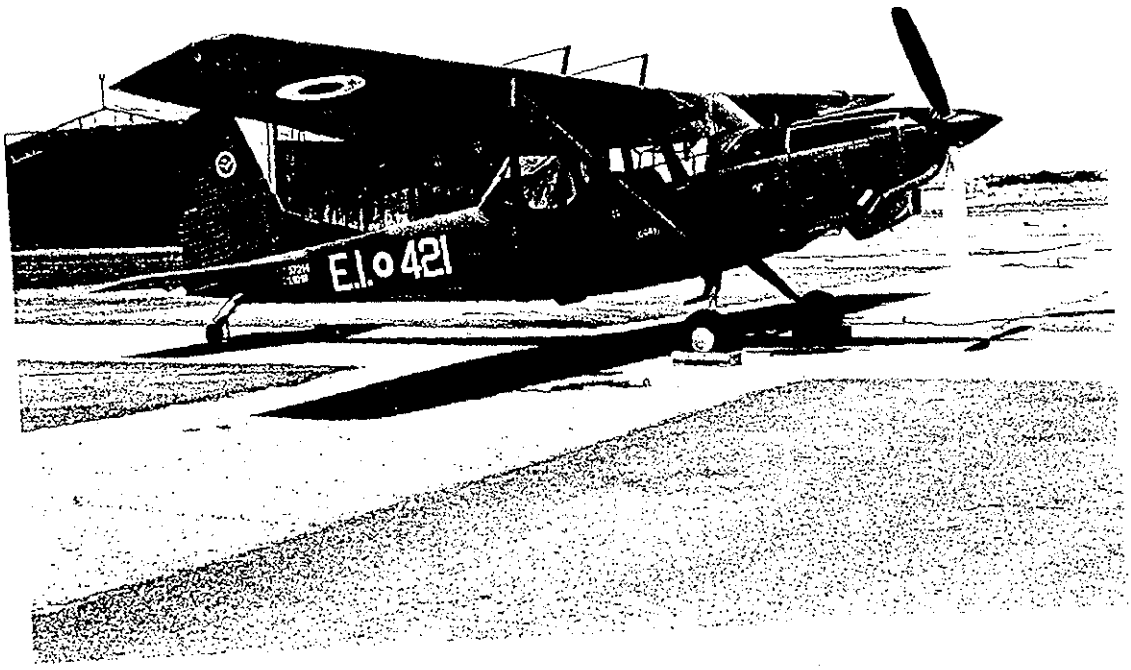

AB 205 IROQUOIS

A 129 MONGOOSE



CH 47 CHINOOK


AB 412 GRIFFON

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## 2. HELICOPTER DEPLOYMENT TO OPERATION ZONES

Air transport of the above aircrafts was avoided because of the significant distances between the zones of operation and the deployment bases in Italy. The sizeable dimensions of the transport helicopters and the additional need to dispatch land support vehicles (cranes - tractors - trucks - cistern trucks) called for transport by commercial liners and/or Italian Navy ships. Loading operations for the aircraft onto the commercial ships proved to be relatively simple due to the possibility of using ships with extendable ramps (of the RO-RO ferry type used to transport vehicles and tanks).

The time necessary for loading each type of helicopter was as follows: approximately 2 work hours for a team of 5 men for each CH-47C, and approximately 1 hour for each 129. (It was necessary to detach the rotors on the CH-147s and the main rotor on the 129s in order to increase loading possibilities in the hold; the AB-205s, with their two-blade rotors, did not require any special operation).

Unloading operations, which technically would have required the same time, proved to be much longer in Mogadishu (Somalia), where 2 or 3 days were needed on account of ship traffic at the dock (unloading operations can be effected on a maximum of 3 ships at a time) and the often hostile attitude of the local population.

Return transport was organized by commercial ships for Mozambique and by Italian Navy ships for Somalia. The use of the helicopter carrier GARIBALDI (with SKY-JUMP for HARRIER aircraft) enabled simple transfer of the battalion as the helicopters were flown on board. Full operational capability was maintained constantly since the helicopters could take off, execute a mission and return on board at any time.

## 3. HELICOPTER ROLES

The various characteristics of the helicopters present in Africa enabled them to compute various types of missions. The main missions in Mozambique and Somalia were:

- reconnaissance: performed by at least 2 helicopters (one of which was armed) with the aim of surveying the terrain and identifying itineraries;

- armed reconnaissance: performed by at least 2 helicopters (at least one of which an A-129) with the aim of searching out hostile elements. (In Somalia, guerrillas of the various factions and almost all the armed groups used armed pick-ups with heavy machine-guns, which enabled a quick concentration of forces. Their frequent objectives were NGO truck convoys of food aid and medicines, often escorted by UNOSOM units.);

- transport: performed by CH-47Cs and AB-205s or AB-412s escorted by armed helicopters with the aim of integrating land transport or substituting it when more convenient or safe;

- limited close air support: performed by A-129s and AB-205s or AB-412s with the aim of allowing the Ground Command to face situations requiring rapid concentration of maximum fire power;

- armed escort: performed by A-129s and AB-205s or AB-412s to guarantee the safety of transport helicopters during air movements, including operations in unloading/loading zones;

- command and control: performed by AB-205s, AB-412s and SM-1019 aircraft to allow Ground Command to effectuate air-borne command and control functions. (The limited number of helicopters, significant distances between locations and the possible presence of guerrilla forces made the advantages of operating in the third dimension quite clear);

- Heli-medivac: performed by AB-205s, AB-412s (6 stretchers) and CH-47Cs (24 stretchers) for the rapid air transport of the sick and wounded. (Many helicopter medical evacuations were carried out in benefit of the local population. The sick and wounded were transported for medical attention at Italian military hospitals, where they remained until recovery).

The missions were carried out day and night. The poor distribution of the ground navigation stations in the African area (such as NDB/VOR or tacan) seldon gave the crew the possibility to rely on the helicopter radionav-aids subsystem. The performance of the doppler system, with few possibilities for the pilots to update the system itself not always gave the crew precise informations about the helicopter position. That is why all the helicopters were equipped with GPS system on board. The AB-205s and AB-412s were also equipped for night flight with NVG (night vision goggles). Flying with goggles was particularly useful during medical evacuations, transport in areas where hostile elements were present and armed reconnaissance after dark.

## 4. DIFFERENT WEAPONS SYSTEMS

In peace keeping and peace enforcement operations, situations can degenerate quickly and involve real danger and outright combat. For this reason, aircraft were equipped with protective devices (armored seats) for the crew and adequate weapon systems for different operative situations:

- The AB-205s alternatively armed with an M23 mod. system (comprised of two MG42/59 machine-guns mounted on both sides of the helicopter) and an M21 MAMEE system (comprised of two 7.62 cal. M134 machine-guns and two 2.75 cal. M158 A1 folding-fin aerial rockets with 7 launching tubes each, mounted in combination on each side of the helicopter);

- The AB-412s alternatively armed with an M23 weapons system (two MG42/59s) and an HL-19-70 system (comprised of two rocket launchers with 19 launching tubes each) installed in pairs on the sides of the helicopter;

- The CH-47Cs armed with an M24/mod. and an M41/mod. system composed of three 7.62 cal. MG42/59s mounted in correspondence with rear doors, the emergency door and the loading ramp;

- The A-129s armed with a HELITOW system composed of 8 TOW missile launchers and a MEDUSA system composed of two 7-tube launchers (cal. 81 mm).

## 5. HELICOPTER PERFORMANCE IN EXTREME WEATHER CONDITIONS

Weather conditions in Africa are extremely severe and constitute a real testing ground for all aircraft. Army Aviation had already dispatched a helicopter unit to NAMIBIA in 1989, but the experienced gained was relevant only to AB-205s. With regard to ITALHELY IBIS in particular, apart from high temperatures and heavy downpours during the rainy season, problems stemming from proximity to the ocean and frequent sandstorms had to be faced. In Mogadishu, the helicopters were stationed outside at the seaside airport and exposed to continual "artificial" sand and dust storms resulting from close-by landings of heavy planes (GALAXY C-5s, ANTONOV AN-124s).

Performance levels were excellent despite these adverse conditions, while average efficiency levels during some periods proved higher than those of a domestic-based unit. This result was obtained by performing certain primary and secondary level technical tasks on the site and constituting an adequate supply of spare parts.

Concerning the performance of the individual types of helicopters, it can be concluded that:

- The AB-205, which has long been employed in similar zones of operation in Africa and the Middle East, confirmed its ruggedness and reliability under difficult conditions. In Somalia, the six AB-205s were constantly equipped with M23 or M21 weapon systems and frequently flown with maximum transportable loads but never presented either serious or even non-routine technical problems;

- The AB-412, although more complex, proved capable of reaching the same levels of efficiency as the AB-205. The hours of maintenance/hours in flight ratio proved only slightly greater than that necessary in Italy;

- The CH-47C, which like the other helicopters spent 15 months in Somalia and 14 months in Mozambique, proved extremely valuable due to its elevated load capacity which allowed for transporting sizeable numbers of personnel and quantities of loads. In Italy, CH-47Cs are subject to a corrosion prevention procedure for use in marine conditions (necessary for use in fire-fighting). This no doubt contributed to reducing the effects of corrosion under African conditions;

- This was the first time the A-129 was used abroad and under adverse weather and operational conditions. It proved indispensable for the execution of operations throughout the mission in Somalia. It was employed in all types of missions either in tandem with another 129, or with an armed AB-205. It was decided to use all three 129s simultaneously in some difficult situations, demonstrating its effectiveness. Its level of efficiency proved very high, while its response to extreme weather conditions was judged as excellent. Motor efficiency was satisfactory despite the lack of air cleaner system. Moreover, the 129 showed good survival capability. All three 129s were hit by shells in combat and yet were able to continue the mission and be repaired in a short time.

## 6. FIRST AND SECOND LEVEL MAINTENANCE

The helicopter battalions in Somalia and Mozambique each had a maintenance squadron composed of first level technicians (from operative units) and second level technicians (from repair units). The squadron disposed of spare parts and equipment for first and second level maintenance and repair jobs. It was decided to use this type of structure on account of the distance from Italy which made rotation of helicopters for further inspection anti-economical.

In Somalia, in particular, the possibility of carrying out complex repairs was made difficult by the presence of strong winds, frequent sandstorms and sometimes torrential

rains. The situation was improved by rebuilding an old Somalian hangar which had been almost totally destroyed. This allowed the technicians to work under shelter. A similar although easier solution was found in Mozambique, where it was possible to rent a hangar at Beira Airport.

Environmental conditions in Africa determined a greater number of preventative and corrective maintenance jobs. This was a result of:

- the rapid corrosion of all unprotected metallic parts;

- the frequent deterioration of hydraulic parts on account of sand;

- the need to wash down motors and ITALHELY/IBIS helicopters frequently on account of the salty air conditions at Mogadishu Airport (Water, produced by a special desalinization plant, remained a precious element.);

- repairs necessitated by gunfire or shrapnel from mortar blasts. In Somalia, on different occasions, three A-129s and two AB-205s were hit by fire from 5.56 mm and 12.7 mm cal. automatic weapons, and six AB-205s were damaged on the ground by mortar blasts. All repairs were performed on the site.

## 7. COMBAT OPERATIONS

Both the operation in Somalia and the operation in Mozambique began as peace keeping missions, but they evolved in substantially different ways.

In Mozambique, the Italian contingent was able to perform its task without ever having to participate in combat. The ITALIA-ALBATROS battalion suffered the loss of an SM-1019 light plane with two pilots on board, but even if the causes of the accident are still under investigation, it is reasonable to assume that the plane hit a power line and that the accident can therefore not be attributed to technical causes or hostile action.

The composition of the ITALIA-ALBATROS battalion (three CH-47Cs, four AB-205s and three SM-1019s) proved capable of performing the task at hand. As much as it was not necessary to open fire, the absence of the A-129 was not felt. The SM-1019 light planes, with a cruising speed superior to that of a helicopter and an autonomy of approximately 4 hours, proved to be more economical for reconnaissance and command and control missions.

In Somalia, not all of the struggling factions peacefully accepted the presence of the forces which made up Restore Hope and, later, UNOSOM II. Military operations which gradually included real armed combat called for the use of helicopters not only for transport and command missions, but for actual "air-mobile" actions as well.

Air-mobility is the combination -- through the use of V/STOL craft, combat forces and equipment -- of manoeuvres and fire in the third dimension of the air/ground battlefield, specifically in the lower strata of the air space. The following are necessary in order to constitute an air-mobile force:

- the availability of rotating-blade craft of the proper type, generally tactical transport and medium-to-heavy transport and attack helicopters, plus a certain number of specialized helicopters;

- a sufficient means to execute the maneuver with a significant ground factor;

- a dedicated ground component;

- logistical support.

The composition of ITALHELY (four CH-47Cs, six AB-205s, two AB-412s and three A-129s) was a determining factor in allowing the air-mobile unit to fulfill its various tasks. ITALHELY was able to ensure both day and night troop transport and fire support.

The choice of different weapons systems made it possible to select the most suitable type of anti-tank or anti-pick-up fire, or against pedestrian troops armed with automatic and anti-tank weapons. The A-129 was extremely valuable in such operations as, with the use of the sight unit, the co-pilot could detect the enemy before any action

could be taken against the helicopter itself. The HELITOW system was useful as it allowed extremely high probabilities of centering targets, even in cases which were not typically anti-tank. In fact, results were precise even when it proved necessary to hit unarmored vehicles.

ITALHELY IBIS participated in all actions performed by the Italian contingent both in Mogadishu and in the vast zone of the country assigned to Italy outside the capital and continued to constitute the decisive element for accomplishing the task at hand. ITALHELY also participated in the most significant moments of combat, in which the Italian contingent suffered an unfortunately high toll of casualties along with the other contingents present. On these occasions, the helicopters both fired and were hit during flight, without however suffering any major damage. In addition, ITALHELY supplied flight hours for the UNOSOM Command and most of the other contingents present. In total, it effectuated approximately 9,000 hours of flight in Somalia and approximately 4,000 hours of flight in Mozambique.

## 8. CONCLUSIONS

Out of area operations must be conducted by a force which always includes a helicopter unit in order to allow for actual air-mobile actions.

- In particular, the helicopter unit must be comprised of:

  . medium-size transport helicopters (CH-47Cs) with elevated load capacities to allow for the safe and rapid transport of men and material;

  . utility helicopters (of the AB-205, AB-412 type) equipped with a weapons system to perform tactical, logistical and medical tasks and to engage in combat when necessary;

  . armed helicopters (of the A-129 type) to provide air-to-ground fire and to guarantee the safety of air-borne formations;

- All helicopters must have a compatible control panel for NVG night flight; pilots must be trained in this type of flight;

- All helicopters must dispose of a GPS navigational system. If possible, data provided by state-of-the-art GPS should be integrated with that of the inertial navigation platform. Such a system simplifies navigation in desert areas and facilitates the identification of analogously equipped ground units;

- A logistically autonomous maintenance team must be inserted in each unit, capable of primary and secondary level technical operations. This squadron must dispose of the means for sufficient ground support, spare parts and adequate hangars for helicopters under repair;

- The Commander of the unit must be ensured that helicopters dispose of a wide range of weapons systems in order to select the most adequate system when necessary. In Somalia, for example, although 70 and 81 cal. rockets were never used, they nevertheless constituted reserve fire power which would have allowed the Commander to defeat eventual large concentrations of guerrillas;

- Ground command and control operations should preferably be carried out on board especially equipped helicopters, even when the number of helicopters engaged in the action is not consistent;

- Ground units must be used to co-operate with helicopter units and this can be attained only through training.

The helicopter is an indispensable means for conducting air-mobile operations. As matter of fact helicopters, because of their speed and flexibility, can greatly assist the quick movement of troops or weapons or can, them self, provide a quick reaction weapon platform.

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| **UNOSOM** | UNITED NATION IN SOMALIA |
| **UNOMOZ** | UNITED NATION IN MOZAMBIQUE |
| **N G O** | NO GOVERNATIVE ORGANIZATION |
| **N V G** | NIGHT VISION GOGGLES |
| **R P G** | ROCKET PROPELLED GRENADE |
| **G P S** | GROUND POSITION SYSTEM |
| **ITALHELY IBIS** | ITALIAN ARMY AVIATION BATTALION IN SOMALIA |
| **ITALIA ALBATROS** | ITALIAN ARMY AVIATION BATTALION IN MOZAMBIQUE |