Minutes

IMPLICATIONS OF CLIMATE CHANGE ON DEFENCE AND SECURITY IN THE INDIAN OCEAN

Saint-Denis, La Réunion, 17-18 February 2020

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AGENDA

Convened in Caserne Lambert, Saint Denis, La Réunion

09.00 ROUNDTABLE 1: IMPACTS OF CLIMATE CHANGE ON HUMAN SYSTEMS

Marie-Dominique Leroux, BRIO project (regionalization of climate change in South-West of Indian Ocean) officer, Météo France, France
Anne-Sophie Tabau, Doctor in Law, Université de La Réunion, France
Marie Thiann-Bo Morel, Doctor in Sociology, Université de La Réunion, France

Chair: **François Gemenne** – Co-director, Observatory on Climate and Defence, Ministry of Armed Forces, France

10.40 COFFEE BREAK

11.00 ROUNDTABLE 2: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF ISSUES

Lt Cdr Steven Caugant, Joint Headquarters, French armed forces in the South Indian ocean, France
Eric Sam Vah, Deputy head of delegation, Indian Ocean Regional Intervention Platform (PIROI), France

Chair: **Cdr Numa Durbec** – Directorate general for International relations and strategy, Policy officer, France

12.45 LUNCHEON

14.15 ROUNDTABLE 3: STRATEGIC ISSUES AND REGIONAL COOPERATION ARCHITECTURE IN THE INDIAN OCEAN

Brigadier Yves Métayer, Commander of French armed forces in the South Indian ocean, France
Raj Mohabeer, Officer in Charge and Acting Director of the Indian Ocean Commission (IOC)
David Lorion, member of the Parliament for the 4e district of la Réunion, France

Chair: **Nicolas Regaud**, Director for international development, Institut de Recherche Stratégique de l'Ecole militaire (IRSEM), France

16.00 COFFEE BREAK AND GROUP PICTURE

16.20 FOLLOW-UP – CONCLUDING REMARKS

François Gemenne – Co-director, Observatory on Climate and Defence, Ministry of Armed Forces, France

17.00 END OF THE WORKSHOP

Hosted at the Cercle de la Redoute, Saint Denis, La Réunion

18.00 COCKTAIL

FOREWORDS

This workshop was meant to be held in English. Nonetheless, as the audience and all participants were French speaking, it was eventually held in French. Slides, predominantly in English, are available upon request.

In the statement on the Australia-France relationship, published on 2 May 2018 during President Macron's visit to Australia, both governments "welcomed the project to map environmental risk exposures in the south of the Indian Ocean and the Southern Ocean, which will help to understand and anticipate the security consequences of climate phenomena". **A first leg of this work was conducted under the leadership of the Australian government, mapping climate risks in the Southern Ocean and East of 78° E longitude in the Indian Ocean.**

The second part of this mapping exercise focuses on the area located West of the 78° E longitude. It includes many inhabited territories, including the Maldives, the Seychelles, Mauritius, Madagascar, Reunion Island, the Comoros, Mayotte, the Chagos, as well as the coasts of Somalia, Tanzania, Kenya, Mozambique and South Africa.

The work was organized around two workshops: the first one took place in Paris on June 28th, 2019; **the second one in La Réunion Island. The latter sought to gather local stakeholders**: representatives from Seychelles, Maldives, India and Australia were invited to the meeting but couldn't join, for various reasons (financial, weather and health issues). Participation of key stakeholders from La Réunion and neighboring islands (Mauritius and the Indian Ocean Commission), however, enabled fruitful discussions around sub-regional stakes and cooperation.

The synthesis of both workshops shall constitute a report that will identify future avenues of cooperation at a regional level.

Workshops expected outcomes:

- Identify vectors of regional cooperation: operational cooperation of security stakeholders, notably on maritime security (around fish stocks issues) on one hand, and scientific collaboration through increased common/regional scientific projects (following the example of the BRIO project supported by the Indian Ocean Commission or the French Barge Rousse project in the Pacific Ocean[1]) on the other hand,
- Discuss potential synergies with Australian and Indian peers (this objective couldn't be achieved, as representatives from these countries were not able to join the workshop)
- Deepen current discussions on potential regional cooperation with local stakeholders, in order to create more thematic dynamics. The PIROI Center could constitute the first of its kind, and could be complemented the development of a MOOC on climate change-related human security risks in the Southern Indian Ocean, gathering several researchers in this field.

[1] https://www.defense.gouv.fr/dgris/presentation/evenements-archives/barge-rousse-un-projet-scientifique-inedit-7-avril-2017

ROUNDTABLE SUMMARY

These three roundtables were unique opportunities to gather renown experts in order:

- to better understand climate change impacts in South West Indian Ocean,
- to review prevention and infrastructure preparedness to climate events,
- to discuss potential regional cooperation schemes.

ROUNDTABLE 1: IMPACTS OF CLIMATE CHANGE ON HUMAN SYSTEMS

The BRIO project, supported by the Indian Ocean Commission (IOC) and funded by the French Development Agency (AFD), is a joint project between meteorological services of La Réunion (Météo France), Madagascar, Mauritius, Seychelles and Comoros to develop **a specific South West Indian Ocean climate model, named Aladin.**

Aladin has many innovative features, among which its regional dimension, enabling the collection and use of more precise data at the sub-regional scale to complement the IPCC model Arpege.

This model is successfully more specific, through:

- integration of islands' altitudes (which didn't appear at all in Arpege),
- correction of biases in scenarii: temperature and rain monitoring in countries of the area over the past decades has enabled researchers to cross-check 1990s IPCC models forecasts for 2000-2018.

Aladin's definition is 12km whereas Arpege's is 150km. Thanks to data monitoring in some countries, this definition could even be lowered to 4km for the rain in Madagascar and 6km for La Réunion.

As of today, the BRIO Project only computed two scenarii (pessimistic and optimistic IPCC scenarii) up to 2100. The development of medium scenarii is upcoming and models have been launched, reaching 2081 at the time of the workshop. Such forecast should be available in the coming months (computation speed: one day computation for one-year forecast).

Climate evolutions in the South West Indian Ocean are available below. One must keep in mind, however, that the Aladin model does not integrate sea level rise and sea surface temperature increase, which have direct impacts on extreme weather events occurrence and intensity:

- **Droughts:** rainfall quantity and frequency decrease, especially during the second semester, and delay of the humid season beginning.
- **Temperature increase:** up to 5°C in Madagascar and on the Eastern African coastline (Mozambique, Tanzania), up to 3°C to 4°C in islands (Comoros, Seychelles, Mauritius, La Réunion).
- **Rise of the number of heat wave episodes and extremely hot days.**

- **Modification of cyclones' route and intensity:** cyclones will be more intense, and their route will deviate southwards. Islands such as la Réunion, currently South from most cyclone routes, will be more exposed and vulnerable.

Social impacts of climate change can already be felt in the region, 1) with an increasing concern among populations (aware of the rising climate related risk), 2) with the growing development of related economic and political decisions and 3) with more climate conscious judiciary system sentences. **Part of this first session evoked more in depth the role of judiciary systems in considering environmental impacts of human activities.** An Australian judge thus confirmed that he will not authorize the opening of a new coal mine, grounding his decision on its direct environmental impacts as well as its broader climate consequences, such as emissions linked with the use of the coal to be sold. In South Africa, the coal power plant Thabametsi has been denied building authorization by the Pretoria-based North Gauteng High Court, in anticipation of the region increasing water-stress, highlighted by IPCC experts. This coal power plant would indeed need important quantities of water (EarthLife Africa Johannesburg v. Minister of Environmental Affairs and others, Case no. 65662/16).

More broadly, discussions of this session highlighted the need for scientific cooperation on regional social and geopolitical impacts of climate change. Several elements speak in favor of a regionalization of climate change-related research. This could be implemented through sub-regional mix research units, following the example of the cross-university French UMR on islands territorial vulnerability to climate change. The University of La Réunion is part of the latter, gathering scientists from all disciplines and all locations.

Participants also addressed the challenge of establishing a studying base for climate change impacts on regional governance. They suggested to offer local islands law-based support, replicating the support the South Pacific Commission provided to its members, helping them prepare for EEZ modifications and sea level rise impacts. Such initiatives would nonetheless have to deal with reluctancies from heads of state to reconsider such sovereign matters. The private sector seems more active, deeming climate risks as concrete and alarming, and structuring specific insurance policies.

Finally, the lack of visibility of IOC member states in international negotiations and arenas has been highlighted as an important limiting factor in adapting to climate change. The possibility to partner with African islands such as Sao-Tome-e-Principe and Capo Verde has been raised.

ROUNDTABLE 2: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF ISSUES

PIROI - Plateforme d'intervention régionale de l'océan Indien

The Regional Indian Ocean Intervention Platform (PIROI) is a local group of Red Cross (Mauritius, Réunion, Madagascar, Seychelles, Mozambique, Mayotte, Tanzania) **and Red Crescent** (Comoros) **representations**, along with the international Red Cross Federation and its international Committee. **These organizations coordinate to better answer local populations needs.**

The region is exposed to various risks: sanitary (vector-borne diseases), **seismic** (tsunami, earthquakes, volcanos), **hydro-climatic** (floods, cyclones, heavy rains). The PIROI works on the implementation of joint scientific programs focused on forecasting climate change impacts on its day-to-day affairs. A Memorandum of Understanding has been signed with the IOC. Scientists from University of La Réunion joined as well.

Intervening at all steps of the natural disaster cycle (education, training, preparedness, response, and rehabilitation), the PIROI and its members are key in Humanitarian Assistance and Disaster Relief (HADR). They are often, as such, an integral part of national HADR plans of their respective countries.

FAZSOI – French armed forces in the South West Zone of the Indian Ocean

FAZSOI can be mobilized for civil security of French citizens in the event of natural disasters, which are to happen more and more often due to climate change. They actively participate in forecasting extreme weather events' intensity and trajectory in collaboration with Météo France, through their high precision and specific tools (including satellites).

In addition to civil protection on French territories, FAZSOI contribute to the stability of the region. From neighboring countries armed forces training to joint response to natural disaster, they stay aligned with their HADR mission and quickly deploy their HADR capacities, in order to avoid the development of insufficient sanitary conditions and food insecurity which could lead to political instability.

FAZSOI HADR interventions in other countries are nonetheless constrained by numerous inherent limitations – due to their status of foreign armed forces. They are to be planned with caution (how, when, and where to intervene?). Such decisions are made in coordination with headquarters in Paris and "defence attachés" in neighboring countries. The latter plays a crucial role in HADR, as a go-between linking international organizations such as UN-OCHA, official aid for development, NGOs and armed forces. FAZSOI base their response to natural disasters (material and operations, from rescue to transportation axes clearing) on need assessments from NGOs such as the PIROI.

IDAI Cyclone – Mozambique

Both panelists mentioned HADR response to Idai Cyclone in 2019 as an example of efficient and productive collaboration, presenting issues at stake in such joint intervention.

The PIROI started its HADR operation by a need assessment from the Red Cross of Mozambique. It was followed by a logistical collaboration with FAZSOI, through material transportation (100 000 euros worth of material was shipped to Mozambique thanks to these two structures joint efforts).

During an HADR intervention, after their need assessment, **Red Cross structures are in need of transportation means and infrastructures,** whether it be by the sea or the air, to dispatch tents, water treatment plants, etc., to areas sometimes inaccessible by land. Communication and coordination tools are also essential assets. FAZSOI are unique partners for HADR operations, as efficient and rapid providers of such tools.

These advantages are linked with limitations due to the armed forces status of the FAZSOI. Foreign armed forces presence is often delicate for local authorities and could be difficult to understand for populations. Interventions should be carefully discussed and entrenched through diplomatic procedures, *de facto* slowing down rescue operations. During Idai HADR operations, FAZSOI played an essential role in transportation and dispatch of PIROI's material, through its naval and air capacities. The ability to answer rapidly was also based on the operationality of critical infrastructures in Mozambique (ports and airports).

Lessons learnt from this joint intervention are the following:
- for PIROI, FAZSOI support has been crucial but politically difficult, triggering necessary adjustments in operative procedures with NGO – specifically regarding the independence of the Red Cross during discussions with local authorities.
- FAZSOI concluded that 1) their preparedness was efficient, 2) coordination and projection strategies as well as communication means with their partners were adapted, and 3) their command and control structure enabled a rapid and orderly intervention.

Overall, this joint operation illustrated the credibility and appropriateness of the FAZSOI-PIROI informal cooperation. This could be formalized by enhanced participation of the PIROI to FAZSOI exercises, such as CYCLONEX.

The main limit to adapted civil and military capacity design and headcount appears to be financial constraints. It is nonetheless necessary to adapt to intensification of extreme weather events in the zone. As an example, the PIROI already delocalized some storage spaces to respond more rapidly to natural disasters with material directly on site.

ROUNDTABLE 3: STRATEGIC ISSUES AND REGIONAL COOPERATION ARCHITECTURE IN THE INDIAN OCEAN

Regional cooperation is necessary in order to anticipate and address climate change impacts (decreasing fish stocks, HADR, critical infrastructure resiliency).

Existing cooperation schemes could be reinforced, benefitting from the momentum triggered by **France current presidency of the Indian Ocean Commission (6 months) and of the Indian Ocean Naval Forum (2 years).** France will put climate change impacts and adaptation at the core of discussions of both institutions for its presidency time.

The French government is closely involved in regional responses to climate change impacts, through the funding of the Indian Ocean Commission by the French Development Agency – AFD, through the PIROI coordination, and through FAZSOI interventions. FAZSOI have the mission of ensuring the security of local French territories and associated EEZ. Their action perimeter is large, over 24 million km^2, among which 2,8 million km^2 of French EEZ, and more than 45,000 French nationals living in foreign countries, a majority of them in Madagascar. **FAZSOI have an inter-army capacity despite a reduced headcount (2 000 men and women) as well as an inter-**

environment capacity (air, land, sea), which enable them to project units all over the zone to realize protection (fight against illegal immigration, against illegal fishing and piracy, protection of French territories) **and prevention missions** (HADR, inter-state cooperation, with Madagascar as a close partner).

Western Indian Ocean is a zone with critical economic and political status, for various reasons: it represents a central node of international maritime transportation (50% of global oil and 40% global gas transportation, 30% of the overall maritime transit) **and an area rich of many resources** (oil and gas, high value fish stocks, biological and genetic resources). It is also a region with increasing needs for maritime security, due to rising illegal activities and piracy.

Due to this strategic situation, many stakeholders are active in the area, in addition to local actors: China, India, Australia, the United States and more recently, Kuwait, Qatar, and the United Arab Emirates.

Western Indian Ocean will likely face a joint increase in various risks (migrations and population displacements, high demographic growth, Islamism). **Climate change impacts will add up.** Extreme weather events growing intensity and frequency will affect underprivileged populations. This could lead, adding on demographic growth, these populations to migrate or find alternative livelihood means, sometimes illegal. Sea surface temperature increase and its consequences, on fish stocks, seashells, and coral reefs, will also represent impactful factors for population living from the blue economy (fishing, tourism). The overlap of more frequent droughts, the associated water stress, and more frequent cyclones could rise the toll of vector-borne diseases. **Those impacts will be critical for populations, governments, and armed forces, in a zone of the globe with large gaps in life standards** and where every circulation (whether it be human and goods) implies important distances by the sea.

Structures represented by the panelist work differently on preparedness to such evolutions but agreed on the importance of anticipation and adaptation of infrastructures, notably infrastructure of maritime surveillance and control.

Tool pooling, common communication and data sharing systems are at the core of the IOC strategy to address these challenges. **Developing specific trainings for security stakeholders** (as suggested by representatives from La Réunion), **facilitating interoperability in HADR and enhancing scientific cooperation** (lowering R&D costs) appear as the first steps to a broader and more ambitious regional cooperation.

Projects like Ocean METISS (IOC), convening IOC member countries around maritime spatial planning challenges, constitutes a potential foundation stone of a larger structured regional cooperation scheme. Other political fora, such as IORA (Indian Ocean Rim Association), may be less appropriate for operational coordination.

Finally, on the international scale, it seems necessary to reinforce the visibility of small island states of Western and Southern Indian Ocean. Common challenges and stakes and regional specificities should lead to a clear common message. Regional cooperation mechanisms could greatly benefit from the support of larger countries such as India and Australia.

CONCLUSION

Workshop discussions did not bring any further potential cooperation pathways with Indian and Australian counterparts, unfortunately. Nonetheless, it has been a great opportunity for local stakeholders (Southern Indian Ocean as well as Reunion-based actors) to connect, setting the ground for more effective and tighter regional projects.

Many exchanges mentioned the growing influence of China, Japan and Arabic countries (Kuwait, UAE, Qatar) in the region, through development aid, and national Red Cross and Red Crescent structures. The absence of coordinated aid has led to multiplication of equipment in the zone, sometimes unnecessarily (two rain radars have been funded in two neighboring countries). **Data collection and sharing, as well as common public policies for risk anticipation and interoperability of HADR missions are the first steps of an optimized response to climate change impacts.**

Finally, some participants raised the questions of the ongoing France-Madagascar discussions on the status of the Scattered Islands. Their results could greatly influence the fluidity and efficiency of regional collaborations. Indeed, the remaining question of French sovereignty of island territories of the region could interfere with HADR common projects with partner countries. Informal discussions highlighted a particularity of this region: the specific relationship that some local islands nurture with governments based on other continents (French overseas territories with their national governments, Madagascar with China, Seychelles with the United States, Mauritius with India). They are often stronger than regional relationships, hindering common goals development. **This represents an additional challenge for the construction and efficiency of regional cooperation.**

PARTICIPANTS LIST

Country	Organization	Last name	First name	Title	Email	Status
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