

# IAEA

## *Structuring the activities to support nuclear and radiation safety in Africa and recommendations*

### **FNRBA**

*The Forum of Nuclear Regulatory Bodies in Africa*

BISMARCK TYOBEKA VICE-CHAIR OF FNRBA  
CEO NNR SOUTH AFRICA

KARIM BEN OUAGHREM – SAFETY OFFICER  
NUCLEAR SAFETY COORDINATION OFFICE  
DEPARTMENT OF NUCLEAR SAFETY AND SECURITY



# List of content

1. Rationale
2. Methodology of Consultancy meeting August 15-19
3. Achievements

# 1- Rationale

In 2015, the Members of FNRBA have approved a Strategic Action Plan for 2016-2021 with **5 priorities** published on the website (<https://gnssn.iaea.org/main/FNRBA>).

**Priority 1:** Create awareness of, and coordinate activities, amongst political and policy makers and other regional forums and organizations.

**Priority 2:** Establish an efficient and effective network of human resources supported by an IT platform to ensure sustainable regional strategies for capacity building with IAEA methodologies.

**Priority 3:** Ensure understanding, develop, promote and implement high standards of radiation protection, nuclear safety and security Member State.

**Priority 4:** Implement capacity building activities at the national and regional level in radiation protection, nuclear safety and security regulatory infrastructure and framework and promoting sustainable regional cooperation in developing needed human resources.

**Priority 5:** Harmonize of national plans for emergency preparedness and response, transport safety and security in line with international requirements to facilitate exchange of information and sharing of experiences.

# Monitoring the SAP achievements

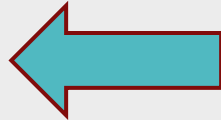
Priority	Priority	Activities	Tasks	Deliverable	Target	Time line	Current stat	Details		
Priority 1	1. Creating awareness of, and coordinating activities, amongst political and policy makers with and other regional forums and organisations	1) Participation of decision-makers, regional bodies and organisations in FNRBA meetings and activities;	Invite regional bodies and organisations to FNRBA Plenary meetings and activities;	Participation in Plenary/Steering Committee meetings	At least 2 organisations participating	Annually				
			Share meeting and annual reports with regional bodies and organisations	Distribute Meeting and annual reports	100%	Annually	Completed	Minutes of Plenary and Steering Committee of September 2015 are already on the FNRBA new website (restricted area).		
		2) Communication and notification of FNRBA strategic plan to regional and national policy makers;	Request endorsement of FNRBA Strategic Plan from Member States and notification to regional bodies and	Letter to Member State permanent missions	All member states (100%)	2016	Pending	SAP on website		
				Letter to regional bodies	At least 2 regional bodies	2016	On going	Action 2016-14 meeting FNRBA - AU by October 31, 2016		
		3) Promotion of regional activities at international events such as IAEA GC, NRC RIC, MDEP, etc.	Presentations at conferences	Presentations and outreach material	2 Presentations	Annually	On going	Presentation of FNRBA during meetings of EuCAS, GNSSN and FORO		
		4) Developing mechanisms for sustainable financial support	Establish FNRBA fund	Develop Financial Model	Approved Financial Model	2017				
				Mechanisms and organisation for managing the fund	Mechanism in place	2020				
				Implement Financial Model	Operational Fund	2021				
		Priority 2	2. Establishment of an efficient and effective network of human resources supported by an	1) Updated list of TWG participants	Request MS to provide and review representatives for TWGs	Revised list of TWG participants on IT platform	50% of MSs	2016	Completed	Experts to be confirmed for some countries
							100% of MSs	2021		
2) List and database of regional experts	Develop criteria and template for regional expert data base			Expert database for each TWG on IT platform	Established database and criteria	2017	On going	Action within TWG3		
	Request and review nominations									
Priority 3	3. To ensure understanding, development, promotion and implementation of high standards of radiation protection, nuclear safety and security in Member States	1) Encouraging Member States to join and effectively implement the international legal instruments on safety and security.	Awareness on international instruments	Awareness seminars on international instruments targeting Member State policy	Regional and sub-regional Seminars	Biennial				
			Communicate the importance of participating in international instruments to Member States	Letter to Member State Permanent Missions to encourage participation in	10% increase in number of Member States participating	2018				
					20% increase in number of Member States participating	2021				
		2) Conducting high level surveys and benchmarking in TWGs identifying main gaps in safety standards and regulatory practices	Development and implementation of questionnaires and surveys	Surveys Status Reports	2 reports	2016	Completed	See Table Challenges vs Activities of CS August 15-19 and Action plan 2016		
					2 reports	2018				
					2 reports	2020				
	4 reports			2021						
Priority 4	4. Implementing capacity building activities at the national and regional level in radiation protection, nuclear safety and security	1) Identifying and developing a database of training and research institutions in FNRBA region	Compile a lists of training and research institutions through collaboration with IAEA and AFRA NEST	List of training and research institutions on website	List available	2017	On going	CS August 15-19, 2016 and activity plan 2017 TWG6		
		2) Implementing regional and inter-regional train-the-trainer and training workshops related	Assessment of training needs for all thematic areas considering surveys, project designs, self-	TWG Work Plans	10 TWG Work Plans	2017	On going	CS August 15-19, 2016 and activity plan 2017 TWG6		

CS August 15-19, 2016

## 2- Consultancy meeting of August 15-19, 2016, “the first of that kind”

### The objectives of the CS meeting:

- To propose ideas to **improve the governance** of FNRBA
- To propose **relevant products and services** that support the nuclear safety and security
- To propose **relevant activity plan with requirements for workshops** that fit to the needs in Africa (for each TWG)
- To ease the **consultation and the coordination with donors and internally at the Agency**
- To propose **tools to monitor the achievements** and the regular implementation of such assessment



### The team:

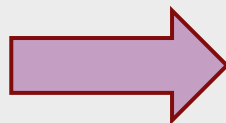
- **Steering Committee** members,
- **Leaders of the 10 thematic working groups (TWGs)**,
- **Local experts from 17 African Member States**,
- **9 Technical Officers of the IAEA**,
- **3 delegates of donors:** from the United States of America **US NRC** and the Republic of Korea **KINS**
- in total, about 40 experts from Botswana, Cameroon, the Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Mali, Mauritius, Nigeria, Senegal, South Africa, the Sudan, Tunisia, Uganda and Zimbabwe

### Roadmap for each **technical working group**:

- Key messages
- Assessment of needs related to the TWG topic
- Assessment of needs related to the improvement of the impact of FNRBA on radiation and nuclear safety (including ideas for developing a generic survey to prepare yearly activity plan)
- Suggestions of services to be provided by FNRBA
- Proposal of activity plan 2017
- Activity report 2016 and publications for the website (before GC60)

### Main proposals and achievements:

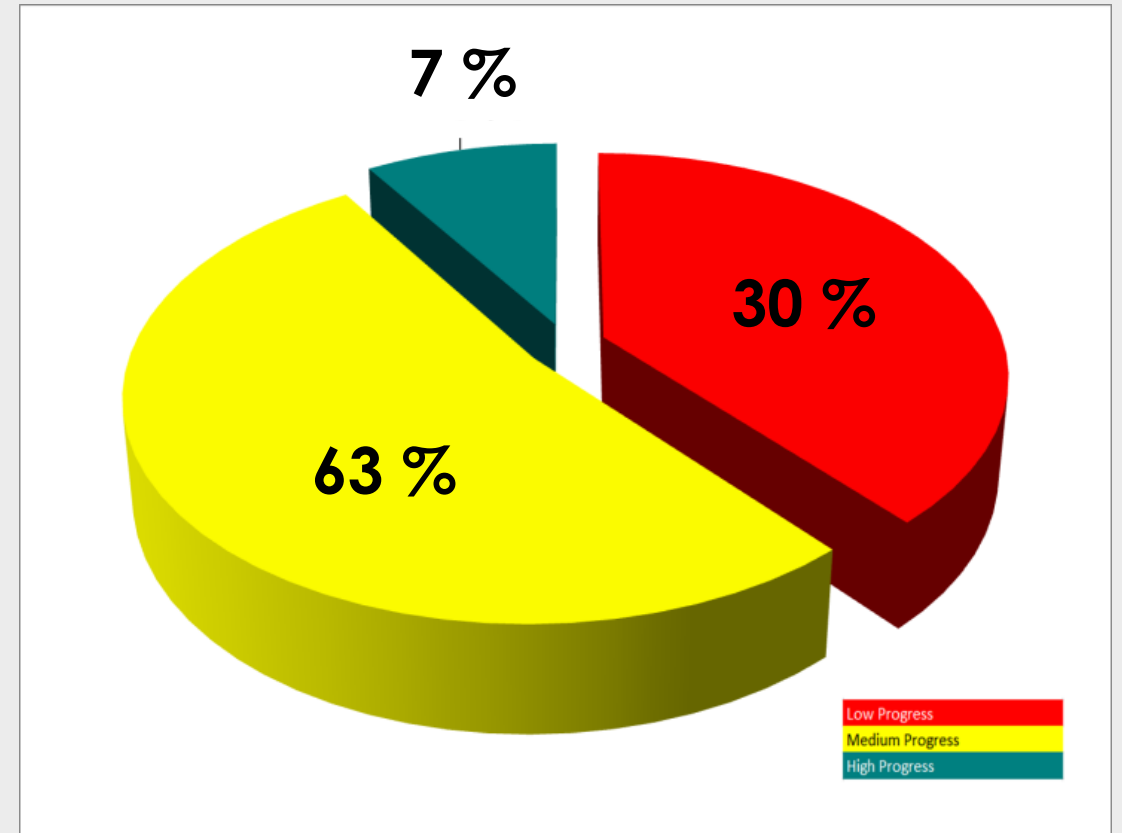
- Assessment per TWG and key messages
- 50 Actions to support the FNRBA (policy makers, communication protocol, Charter, publication procedures)
- Activity plan per TWG and direct target impact
- Website requests for TWG EPR and Transport safety + 5 survey reports to be published on the website (EPR and Licensing)



## 2. Assessment of needs related to the TWG1 (Regulatory Infrastructure)

### Situation Analysis

- From RASIMS profiles, the IAEA carried out an analysis of the situation regarding the status of the regulatory infrastructure of the Member States (MS) in the region.
- Based on the results, MS were categorized in 3 groups based on their overall performance indicator for the 14 elements of TSA1.
- Nearly one third of the MS do not yet have an adequate regulatory infrastructure in place.



## 2. Assessment of needs related to the TWG1 (Regulatory Infrastructure)

### Needs Analysis

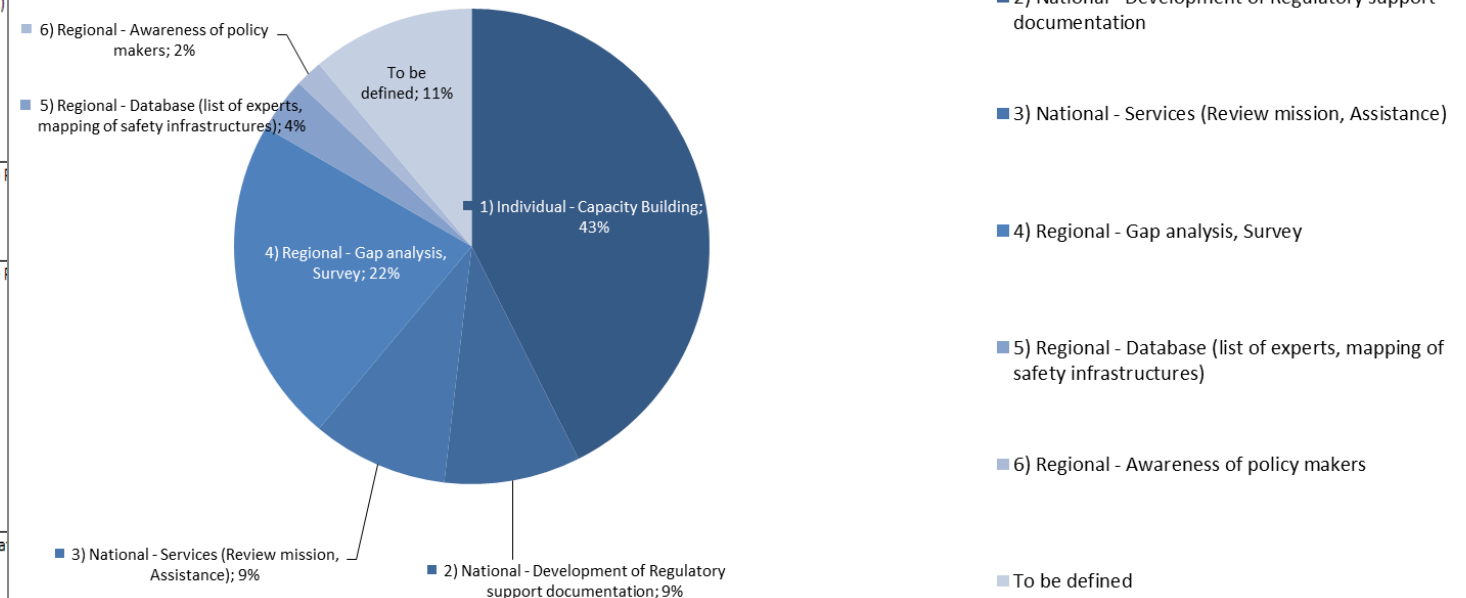
- The assessment has clearly revealed the weak areas within the TSA1 where MS further need assistance.

TSA1 Element	Number of red countries	Number of yellow countries	Countries need improvement % (red)	Average PI (Out of 3)
Management System	40	4	90.9 %	0.5
Enforcement	37	7	84.1 %	0.7
Inspection	24	18	54.5 %	1.2
Radioactive Sources Safety and Security	26	16	59.1 %	1.2
Authorization	19	22	43.2 %	1.4
National Register of Sources	19	21	43.2 %	1.4
RB Staffing and Training	17	23	38.6 %	1.4
Regulations	14	30	31.8 %	1.5
RB Establishment	18	24	40.9 %	1.4
RB Funding	22	19	50.0 %	1.3
International Cooperation	14	28	31.8 %	1.6

# 3- Achievements – Activities vs Challenges

A- Challenges / Activities				B- Direct Impact Target		D- Support and donors				C- Interest of Member States		
TWG	Challenges (justification of the needs through gap analysis)	Proposed activities	Linked activities	Impact target	Type of deliverable R: Report D: Database P: Publication for public website of FNRBA	FNRBA	US NRC	KINS	IAEA	Priority as given in the Strategic Action Plan	Priority proposed by CS15-19/08	Time proposed by CS15-19/08
<b>TWG1</b>	<b>Legislative and Regulatory Infrastructure</b>											
TWG1	1.1 To raise awareness at regional and international level, on the importance and needs to strengthen the regulatory infrastructure in the region.	1.1.1 Regional Meeting for high level decision makers on the importance for their support to regulatory bodies.		6) Regional - Awareness of policy makers	R		possible support to be confirmed				3	
TWG1	1.2 To provide guidance to national regulatory bodies on its functions to regulate complex radiation practices.	1.2.1 Development of a <b>Guide for Regulatory Bodies on Licensing of Radiotherapy Facilities</b> (Activity to be implemented together with the experts in TWG2)	TWG2	2) National - Development of Regulatory support documentation	P		possible support to be confirmed				1	
TWG1	1.3 To have training courses, workshops and meetings to discuss issues and challenges related to strengthening of the regulatory infrastructure.	1.3.1 Regional Workshop for Heads of regulatory bodies in Africa to discuss the issue of sustainability of the regulatory infrastructure in the region.		4) Regional - Gap analysis, Survey								
TWG1	1.4 Enhance the capacity of regulators in MS in the field of Regulatory Control of Radiation Sources	1.4.1 Advanced TC on Effective and Sustainable Regulatory Control of Radiation Sources	Activity proposed via TWG6	1) Individual - Capacity Building								
<b>TWG2</b>	<b>Radiotherapy</b>											
TWG2	2.1 A training course be developed that will be used to train the members of the regulatory bodies that will be tasked with developing or drafting the model regulation. Those who have been trained in drafting regulations, will therefore be used to draft the model regulations that are needed to regulated radiotherapy activities in Africa.	2.1.1 Training program to increase technical capability and develop model regulation		1) Individual - Capacity Building								
TWG2	2.2 These experiences will range from conceptualising and developing radiotherapy facilities to inspection and enforcement activities that are carried out in radiotherapy.	2.2.1 Arrangement of two regional workshops to share experience among the member states		4) Regional - Gap analysis, Survey								
TWG2	2.3 Such lack of regulatory competence in radiotherapy has resulted in poor inception and implementation of radiotherapy facilities. It is evident in many countries that new facilities are coming up but assessment of such facilities from design and shielding to quality control and assurance and finally to inspection and enforcement remains a nightmare to both the regulators and the regulated. It is not easy to be regulated by people who are incompetent. It is with this that it is strongly proposed that the curriculum be enhanced to include	2.3.1 Explore the possibility to designate the Regional training center for Regulatory Body on RT		4) Regional - Gap analysis, Survey								
TWG2	2.4 Various member states have peculiar requirements when developing radiotherapy facilities. It is therefore proposed that expert mission be developed and implemented so as to effectively address those particular issues with a one on one	Expert mission based on the specific need of member states		3) National - Services (Review mission, Assistance); 9%								

Distribution of type of activities





# 3- Achievements – Suggestions of services to be developed by FNRBA

- To foster Harmonization of regulations and regulatory process: regulatory infrastructure, model regulations, guidelines, inspection procedures, guidance to regulate complex radiation practices.
- To organise Peer reviews (emergency, transport...) with regional experts
- To develop Data Bases (safety infrastructures, Group of expert in the various specialized areas at regional levels and proposal for developing the Matrix based on SSG16 for embarking countries
- To develop an Innovative platform of request for Regulatory Bodies in Nuclear and radiation Safety
- To promote exchange of information between the involved MS in the region as regard to the movement of radioactive sources across countries.
- To support capacity building in calibration of dosimeters and other inspection measuring instruments.
- To identify and strengthen regional training center(s) of excellence in different thematic working areas to be included in the Forum database
- To consider developing and implementing e-learning capability within the existing IT.

# 3- Achievements – **Suggestions of services to be developed by FNRBA**

- To initiate practical arrangement among MS with in the continent and sub region.
- To improve awareness of FNRBA activities and of the resources needed for regulatory bodies to implement a robust legal and regulatory framework.
- To Facilitate cooperation within FNRBA and international partners to assist Member States in developing legal and regulatory framework.

# SUGGESTED SERVICES TO BE PROVIDED BY FNRBA

Capacity Building Strategy

Exchange and coordination with other networks and forums

Awareness, visibility and promotion of work

TWG Progress Reports

Addressing main gaps in standards and practices

Encouraging self-assessments and peer review missions

Participating in expert mission and peer reviews on the continent

Integrated events calendar for the Forum

# 3- Achievements – Action Plan 2016-2017

Action	What	Responsible	Where/When
1	1st Steering Committee 2017	Steering Committee	in Cape town March 2017
2	2nd Steering Committee 2017 meeting combined with TWGs	IAEA K.Ben Ouaghrem	May/June 2017
3	Draft of internal rules including the procedures: communication protocol, TWG leader nomination, etc...	FNRBA Secretary	March 2017
4	ToR of TWGs	TWG leaders	March 2017
5	Confirmation of TWG leaders Confirmation of experts per TWGs	Plenary members	Sept.26, 2016 October 2016
6	Identification of services to be implemented for 2017 (infrastructures mapping, peer reviews, model regulation...)	FNRBA Secretary + TWG leaders	TBD
7	ToR for the development of an Assistance Platform (AP)	B. Tyobeka	March 2017
8	Official request for the development of AP to IAEA	FNRBA Secretary + Chair	Sept., 2016
9	Comments on the MoU to be sent to KINS	FNRBA Secretary	Done
10	Coordination for the signature of the MoU	FNRBA Secretary	Pending
11	Identification of contact point with TAMU	IAEA K.Ben Ouaghrem	Sept., 2016
12	Coordination for a cooperation meeting FNRBA - RCF	IAEA M.Maoka	May/June 2017
13	Coordination for a cooperation meeting FNRBA - WENRA	IAEA K.Ben Ouaghrem	Dec. 2016
14	Coordination for a meeting FNRBA - AU (via letter)	FNRBA Secretary (draft) + Chair	October, 31 2016
15	Summary report on the African Regional Conference Sept.14-15, 2016	FNRBA Chair + East African Representative	Sept.27, 2016
16	Creation of a folder dedicated to the review of the Charter Submission of the charter + process to Plenary Members	IAEA S.Kunjeer FNRBA Chair	Aug.31, 2016
17	Decision to start the amendment of the charter	Plenary members	Sept.27, 2016
18	Publications listed in 2.4 to be published on the website	P.Bester, A.Muller, IAEA S.Kunjeer	Sept.20, 2016
19	Invitation letter to Plenary meeting including agenda	FNRBA Secretary	Aug.22, 2016
20	Organisation of Plenary meeting	see in 2.5	see in 2.5
21	Consolidation of Activity Plan 2017	Donors, IAEA TO, IAEA Secretariat	ongoing
21	Link the needs of FNRBA to the priority of SAP	FNRBA Secretary	Sept.27, 2016
22	Position on the needs of FNRBA sent to FNRBA partners	FNRBA Chair	Sept.31, 2016

# Summary

In total, about 50 activities have been identified: half of them are related to the development of skills and knowledge, 10% are dedicated to the development of regulatory support documentation such as model regulations and guides, and the rest are related to experience sharing and development of a regional database.

Within the framework of this coordination meeting, parallel meetings per TWG were organized to support ongoing technical cooperation projects under the African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA).

The key outputs of the meeting are the FNRBA action plan for 2016–2017 with 22 actions, and a survey table of “challenges vs activities” to support nuclear and radiation safety in Africa. Moreover, the new website developed in 2016 will improve information sharing and the promotion of relevant publications and documents accessible to the public. In particular, five survey reports on nuclear infrastructures and on emergency preparedness are now published on the public page of FNRBA.

Thank you for your attention....

