



Kingdom of Morocco

Ministry of Education, Higher Education, Training and Scientific Research

Direction of Technology

# EXAMPLE OF REGIONAL AND NATIONAL MEASURES TO IMPROVE BIOSAFETY AND BIOSECURITY

Khalid R Temsamani  
BWC Meeting of Experts  
Geneva, 18-22 2008





# THE MENA REGION



# MENA Countries and BTWC

## States Parties

1. Algeria
2. Bahrain
3. Iran (Islamic Republic of)
4. Iraq
5. Jordan
6. Kuwait
7. Lebanon
8. Libyan Arab Jamahiriya
9. Morocco
10. Oman
11. Qatar
12. Saudi Arabia
13. Sudan
14. Tunisia
15. Yemen

## Signatories

- Egypt  
Syrian Arab Republic  
16. United Arab Emirates

## States not members

Mauritania



# Some dates of ratification of the BTWC

- Morocco : Ratified/acceded 21 march 2002
- Algeria : Ratified/acceded 22 july 2001
- Libya: Ratified/acceded 19 January 1982
- Jordan: Ratified/acceded 18 june 1982
- Lebanon: Ratified/acceded 26 March 1975
- Iraq: Ratified/acceded 19 June 1991
- Iran: Ratified/acceded 22 August 1973
- Oman: Ratified/acceded 31 March 1992
- United Arab Emirates: Ratified On 19 June 2008

Opened for signature in 1972 and entered into force in 1975. (162 countries)



# IAP Statement on Biosecurity

(2005)

Principles to guide individual scientists and local scientific community that may wish to define a code of conduct for their own use

- Awareness
- Safety and Security
  - Education and Information
  - Accountability
    - Oversight



# Principles endorsed by the following MENA National Academies

*(68 Academies in total)*

- Academy of Scientific Research and Technology (Egypt)
- Academy Hassan II des Sciences et Techniques (Morocco)
- Palestine Academy of Science and Technology





# VISION & OBJECTIVES

# Spectrum of the Biological Risks considered in the Biosafety and Biosecurity Strategy

*Minimizing risks rather than wasting time on definitions !!*



Naturally  
Occurring  
Diseases

Re-emerging  
Infectious  
Diseases

Unintended  
consequences  
of Research

Laboratory  
accidents

Lack of  
awareness

Negligence

Deliberate  
misuse



# Key approaches

- ❑ Integrating modern biotechnology in their efforts to achieve national and regional development
- ❑ Biosecurity and Agriculture: preventing the introduction of alien pests and diseases into the MENA countries
- ❑ Promoting public education, awareness and outreach
- ❑ Implementation of National and Regional bodies for B&B: Science advising/Science Ethics Committees.

Agriculture

**Education**

Decision making

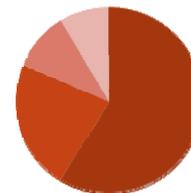
Coordinating bodies and  
Science Advising

International cooperation



# Priorities for the MENA Region

- ❑ **Plant protection:** Case of **SWARMS**: Despite control operations, the desert locust situation continues to be extremely serious in northwest Africa (source: FAO)
- ❑ **Public health:** ex. Artificial insemination; In vitro fecondation (15 centers in Morocco !); Unformal medicine
- ❑ **Tourisme** : ex. Bioterrorism (food..)
- ❑ **Risk analysis, monitoring, surveillance and management**
- ❑ **Illegal immigration** as vector for pests and diseases
- ❑ **Commerce and economic opportunities** arising from Biosecurity
- ❑ **Equitable access by all to the modern-biotech-generated products**





# THE B&B STRATEGY

## strategic objectives:

- Biological Risk Control
- Bio Preparedness (including Detection and Response)

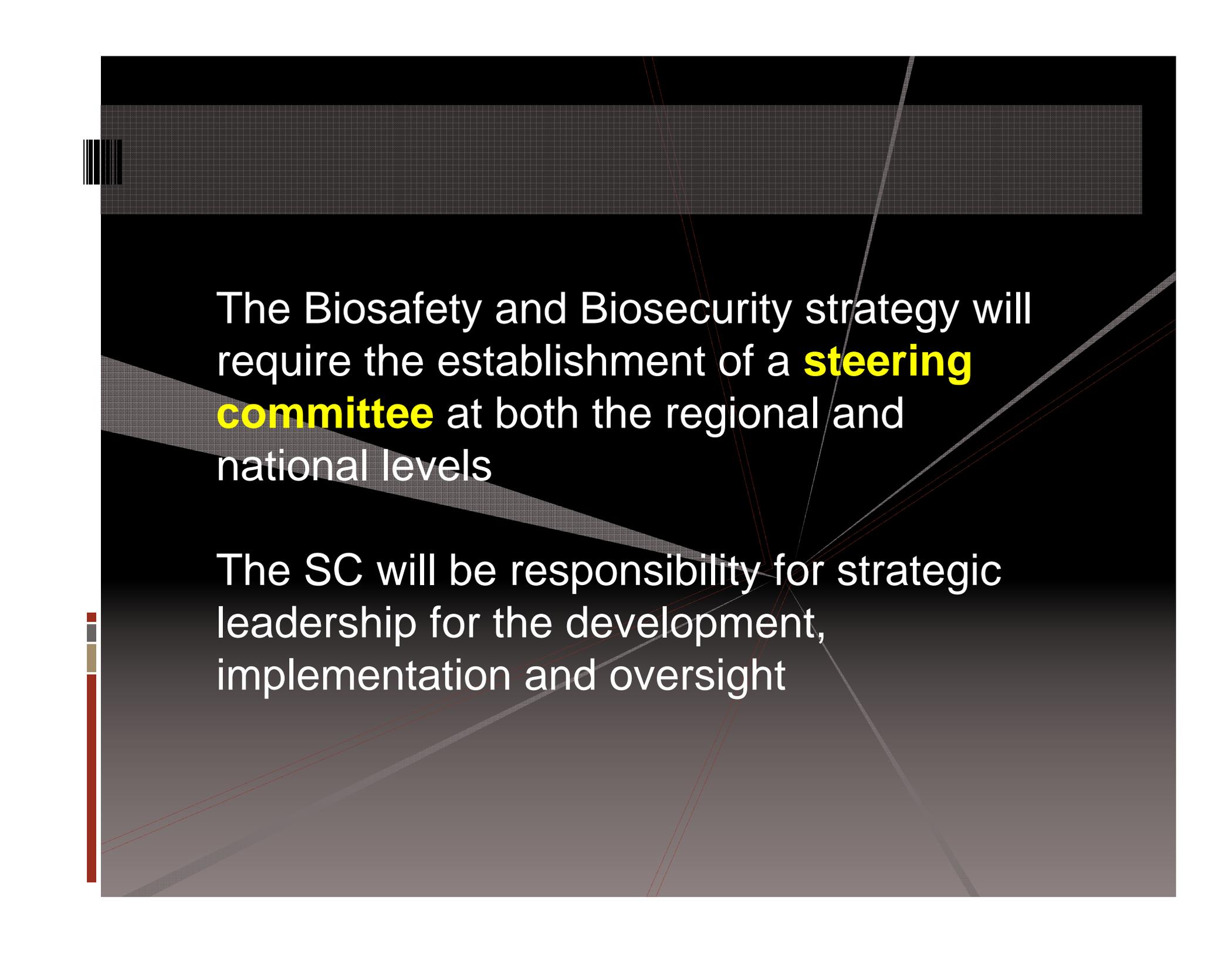
## strategic elements:

- Capability and capacity building
- Legislation, regulation (international and national)
- Governance, scientific responsibility, ethics-based codes
- Coordination
- Awareness
- Partnership and collaboration
- Border inspections
- Surveillance
- Emergency response
- Diagnostics
- Monitoring
- Reporting and reviews.

# Key elements of the strategy

Core group meeting in Abudhabi  
May 2008





The Biosafety and Biosecurity strategy will require the establishment of a **steering committee** at both the regional and national levels

The SC will be responsible for strategic leadership for the development, implementation and oversight



# MOROCCO AS AN EXAMPLE IN THE REGION

# Kingdom of Morocco

[www.maroc.ma](http://www.maroc.ma)



# Morocco's point of view on the Dual Use dilemma

- Supporting the growing flux of scientists inside the frame of global sharing of knowledge but at the same time is concerned about **some life sciences research** that could be misused or could constitute a biological threat to national security or public health.
- Any research leading to substances, transformation or biotechnology processes that can impact negatively on our **natural resources** ( water); **agriculture, crop quality** and the **health** of our citizens **is considered dual use of life sciences research.**
- Any research leading to substances (toxin), products or technology that can **induce virulence, spread infections among our population, show resistance to known prophylactic agents** while not allowing to be **detected** using conventional detection methods is also considered misuse of life sciences research.
- Morocco is determined to secure life sciences research results produced inside its territory by preparing some legally binding measures.

# Other research risks



- Any research that confers pathogenicity or enhance the virulence of a pathogen
- increasing the stability and/or resistance of a toxic agent
- Any research that generates new toxins, novel genetically modified bacteria or viruses that will have harmful consequences on man kind, farming, agriculture, aquaculture and marine wildlife
- Creation of **harmful recombinant organisms**
- We believe that the **dual use dilemma** has to be **analyzed, studied** and **recommendations** need to be made at an **International level**
- Single governmental actions are not enough inside the frame of globalization of science . *“Think globally Act locally”*.

# National Microbiology and Molecular Biology Laboratory

<http://www.cmm.ma/>



For the first time, a Moroccan focal point is created where microbiological material is preserved and related information and data are compiled.

It is responsible for the distribution to interested academic and industrial workers.

**The Moroccan Coordinated Collections of Micro-organisms -CCMM-** is a national network for science and research. It contains 10 institutions belonging to 4 ministries (Higher Education and Scientific Research, Agriculture, Health and Equipment).

Provider of the private sector for microorganism

[strainshttp://www.straininfo.ugent.be/About/index.php?cat=5](http://www.straininfo.ugent.be/About/index.php?cat=5)

# National actions in biosafety and biosecurity

- National Committee of Biosecurity”, (2005)
- Biological and chemical security curricula at academia
- Reform of the graduate studies system in Morocco : CED and Doctoral Thesis Charter (Law: 00-01)
- **National commission** for research project selection before funding approval (mainly universities)
- At University level: **science commissions** for assessment of research projects and research results

## International engagement: BTWC

- Morocco submitted in 2005 its first report in conformity with the Confidence-Building measures agreed by the States Parties during the 2nd and the 3rd Review Conference of the BWC
- Morocco also submitted a second report in 2006 followed by a third report in 2008 and is willing to participate regularly in BTWC's relevant process

# US-Morocco Cooperation in the Field of Biosecurity

## US-Morocco Science and Technology Cooperation agreement (Nov. 2006):

A cooperative action between experts of the **US National Academies** and the **Moroccan Ministry of Higher Education and Scientific Research** will assess, in **October 2008**, Morocco's capabilities to:

- 1- control potential biological threats (highly dangerous pathogens),
- 2- learn more about programs of Moroccan government agencies and international organizations that attempt to reduce local biological threats,
- 3- Moroccan perspectives on the potential for intentional or unintentional releases of dangerous pathogens.

*The team's findings will be included along with those from teams visiting several other countries in a report to be prepared by the Academies and released in the spring of 2009.*

# US-Morocco Cooperation in the Field of Biosecurity

Joint US-Morocco Conference on  
Biosafety and Biosecurity

3-5 November 2008

Coordinated by the Institut National  
d'Hygiène (INH) and US State  
Department

# Biosafety Level 3 Labs in

## Morocco

- Pasteur Institute: Reference Laboratories: virology (BSL2 and BSL3) operational 2006
- Biopharma Laboratory in Rabat (BSL3)
- Gendarmerie Royale (BSL3 in Rabat)
- Mohamed V Military Hospital (BSL3)
- National Institute of Hygiene (BSL3 in preparation)
- No classification yet for University labs

Departement of Virologie is a WHO reference center for poliomyélitis and measles and WHO reference centre for influenza.



# Bioethics Issues in Morocco

- **Insufficient regulations** at National level although new technologies are everyday introduced in the country
- **Law 16-98** related to **donation, removal and transplantation** of **organs** and **human tissues** (*BO N° 4726 of 16 September 1999*)
- No National Bioethics Committee
- No Equitable access to good healthcare by all citizens in the respect of dignity of the patients
- Underway: **An Advisory Council for Human organs transplant.**
- Flourishing centers of in-vitro fecundation
- No National law on the use of humans for medical research purposes ( *a law project is underway*)
- Insufficient awareness and education on bioethics issues
- **Comité d'éthique pour la recherche biomédicale**



# Toward a National Code of conducts in science ethics and

## bioethics

The Inter-Ministerial committee on Scientific and technological Research Policy chaired by the Prime Minister will meet in September 2008 with two important decisions on the agenda:

- 1) **National Commission of Science Ethics**
- 2) **Biosafety and Biosecurity National Commission**

**A code of Science Ethics and a code of conduct for life sciences researchers.**



BBIC - 2009  
Casablanca  
Morocco  
April 2-4, 2009

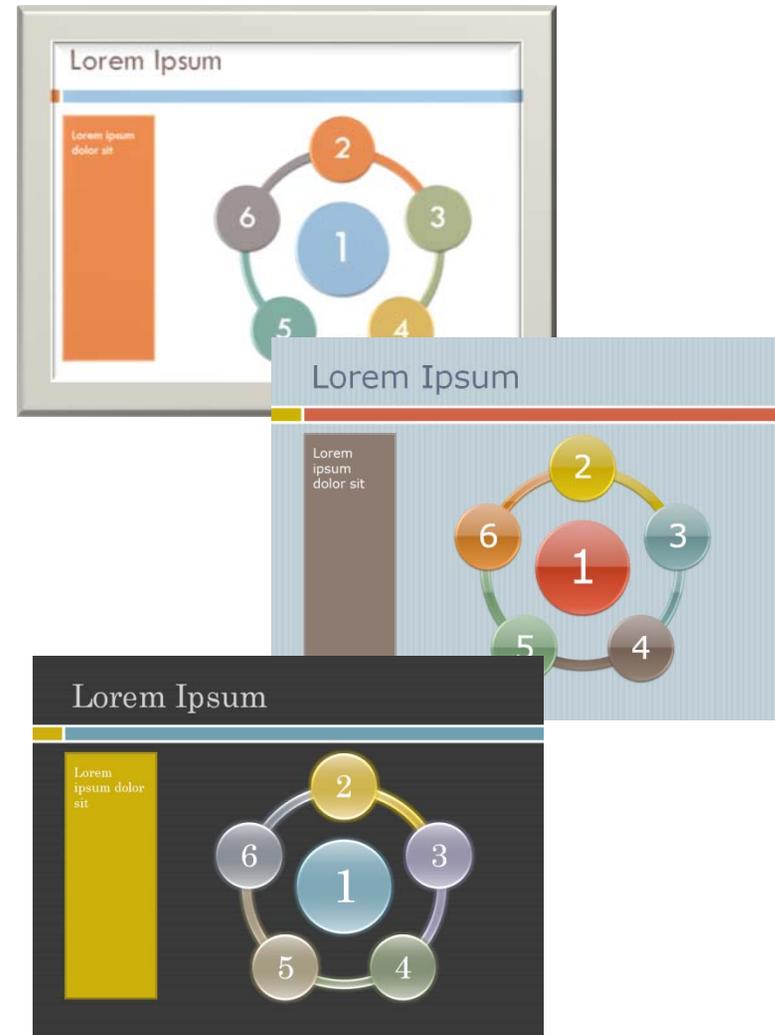




# **HEALTHIER AND MORE SECURE COMMUNITIES IN THE MENA REGION**

# BBIC-09 Coordinating Committee

- International Council for the Life Sciences (ICLS)  
Washington DC
- Environmental Agency of Abudhabi (UAE)
- Jordanian Royal Society (Jordan)
- Ministère de l'Enseignement Supérieur de la Formation des Cadres et de la Recherche Scientifique (Morocco)
- Funding: ICLS; Robert and Ardis James Foundation; MHESR; others



# Perspectives for International

## Cooperation

- MHER is setting up mechanisms at universities able to increase awareness among the academic community about the potential misuse of legitimate life sciences research specially when engaging in international scientific cooperation (ex. EU 7FP)
- Morocco is ready to play active roles at the MENA level in areas that relate to biosecurity, including the development of a Regional Network and/or Society (ex. MENA B&B Association).
- It is desirable for us to set-up international standards in the field of Biosafety and Biosecurity that takes into consideration freedom of mobility for scientists, dignity and cultural pluralism.



**THANK YOU FOR YOUR ATTENTION**