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Biosecurity and Emergency Preparedness

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Abstract--- *To reduce the infectious diseases transmission risk in livestock and crops, quarantined pests, living modified organisms and invasive alien species an originally conceptualized set of preventive measures designed is known as biosecurity. Some risks are growing rapidly, Because of limitation n available resources and time for calculating the likelihood and analyzing threats of the occurrence developing of an effective policy is a major challenge. The emergencies in biosecurity can occur through weeds, pests and diseases; these are giving a negative impact on community, economy and environment. Commonly occurring incident which are within the capacity of NSW Department of Primary Industries (DPI) are not included in biosecurity emergencies.*

Keywords--- *Bioscurity, Emergencies, Diseases, Crops.*

I. INTRODUCTION

Introduction of harmful organisms to plant, human and animal life and for stopping them to spread measurement refers as biosecurity (1,2). A combination of systems and processes taken as a measure that have put in place by agricultural managers, bioscience laboratories and customs agents that prevent the utilization of harmful toxins and pathogens (3,4).

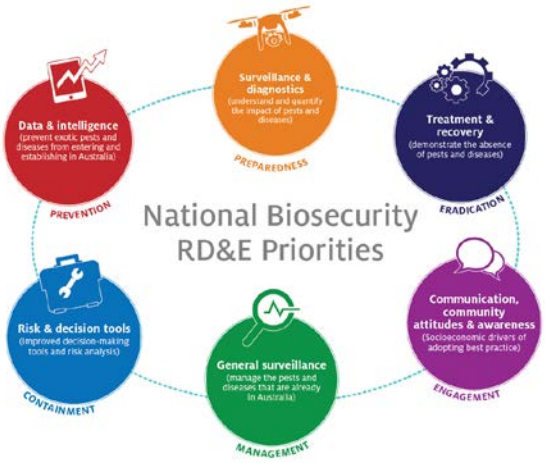

Figure 1: Biosecurity Requirement

According to several disciplines biosecurity can defined and it has multiple meaning. By the environmental and agricultural communities the term was first used. In response to the biological terrorism threat in the late 1990 (5,6) this was first used.

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From research laboratories prevention of the intentional removal (theft) of biological materials encompasses by biosecurity. To prevent the utilization of harmful toxin and pathogens for malicious use a collection of practices and system use as a prevention measure that put in to a place of bioscience laboratories. It also responsible to prevent the spreading of these biological agents (7,14,19).

II. Goals Of Biosecurity

The main goal of biosecurity is to protect and increase the produce of agricultural and protect the human health by management, prevention and control of risk factor of biological aspect (8). To prevent event of adverse biosecurity and to protect against the bioterrorism and is also aim of biosecurity. On social and political changes and on appropriate interventions it also offer advice by government regulatory agencies it should be adopted (9).

Figure 2: Goal of Biosecurity (10)

III. Factors Of Biosecurity

Some factors that influence the biosecurity are as follows:

1) On food imports some nation highly dependent
2) In agricultural and food products trade increments
3) Globalization
4) To biosecurity information advance in global and communication access
5) For signatories of related international agreements legal obligation
6) Impact of agriculture on public and environment and to biodiversity high attention of public.
7) Operational and technical resources security
8) For effective biosecurity shift from nation independence to nation interdependence
9) Across border increasing movement and travel of people
10) New food processing and agricultural production techniques (11,15,16)

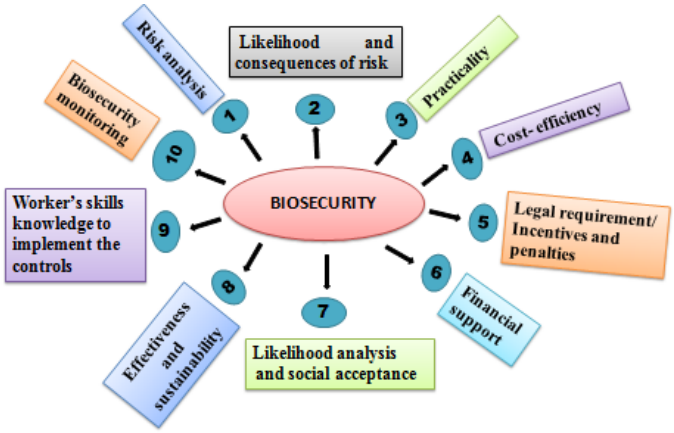

Figure 3: Factors of Biosecurity(12)

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IV. BIOSECURITY EMERGENCY

Across all sectors in many countries for respond to biosecurity incidents and to prepare the biosecurity incidents the Biosecurity Emergency Management Knowledge Base give access of current resources and information.

To eliminate or reduce the risk and to enhance the resilience of a environment and community or to reduce the susceptibility Many nation comprehensive approaches to biosecurity emergency management use foyr activities types. They are:

1) Recovery
2) Preparedness
3) Prevention
4) Response

For management of biosecurity emergency it's developing various generic or specific information sectors. Like internet, intranet and extranet sites, electronic filing systems across the several sector and agencies external and internal information management systems spread the information. To access this information easily and quickly this site can allow the personnel biosecurity response. For a single information source that is identified by biosecurity sectors and agencies fill the requirements (13,17,18).

4.1 Emergency Preparedness

In many countries for biosecurity emergency preparedness Primary Industries and Regions are responsible, following main activities are included:

1) biosecurity Awareness of Biosecurity
2) Biosecurity planning
3) Emergencies in animal
4) Biosecurity training

4.2 Planning

The response plan of biosecurity emergency defined:

1) It reviewed the plan annually.
2) authorities legislative
3) In the event of biosecurity emergencies responsibilities and roles
4) Supporting agencies and industries role
5) Undertaken Procedures

4.3 Training

In a biosecurity emergency response for all staff required to involve in a tanning program that is provided. Team development of biosecurity emergency response is the main focus of training, it include:

1) Exercises of simulation
2) Development of resources

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3) Conducting workshops
4) Exercises of desktop

4.4 Biosecurity awareness

For providing awareness of emergency disease and pest and promoting the biosecurity many nations work. It included promotion through:

1) Exercises of simulation
2) Conducting workshops
3) Industry liaison and training and identification
4) Field days

4.5 Animals in Emergencies

At all stages of emergencies for the welfare of their animals the owners of animals are responsible although in helping the people to exercise their responsibilities for animals non-government and government organizations play a supporting role.

In emergencies to manage the animals and to plan ahead, previous events of emergency help to improve the capacity. It is important to aid in recovery after emergency events, improve animal welfare outcomes, and reduce the behavior of last-minute risk-taking.

4.6 Framework

With the community, peak industry bodies, animal welfare organizations, other government agencies developed a framework of Managing Animals in Emergencies.

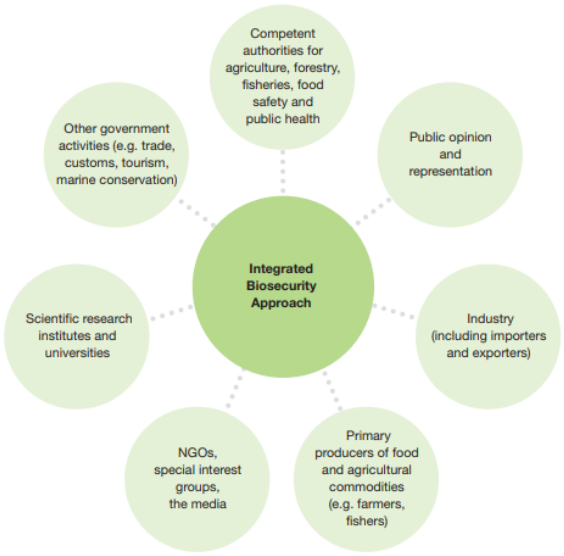

Figure 4: Biosecurity approaches

In Emergencies framework the main aim is to ensure that all animals are considered by industry stakeholders, key government and owners when they are in emergencies, responding or preparing for planning.

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At all level in emergencies for the management to support planning the framework outlines guiding principles. Before, during and after emergencies it defined the responsibilities and role for animals, also that foe the animals who provide services.

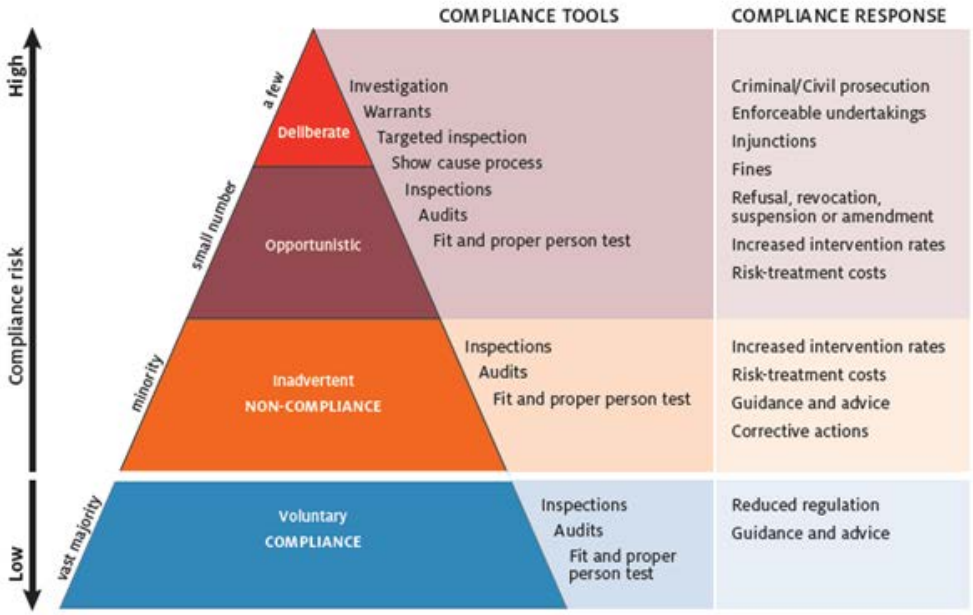

Figure 5: Compliance Plan of Biosecurity

V. BIOSECURITY INCIDENT MANAGEMENT SYSTEM

For management of initial recovery operations and biosecurity incident response to to provide guidance on contemporary practices many nations developed a Biosecurity Incident Management System (BIMS).

It can consider as all hazard approach that:

1) To a biosecurity environment it is contextualised
2) It can applied to biosecurity irrespective, incidents of scale or sector of response
3) To incident management the most contemporary approach represented

For all biosecurity incidents for a effective and consistent management framework BIMS create the basis. It gives:

1) Scalability
2) Flexibility
3) Common terminology.

Three principles of BIMS are:

1) Control Span
2) Approach that is functional
3) By objectives management

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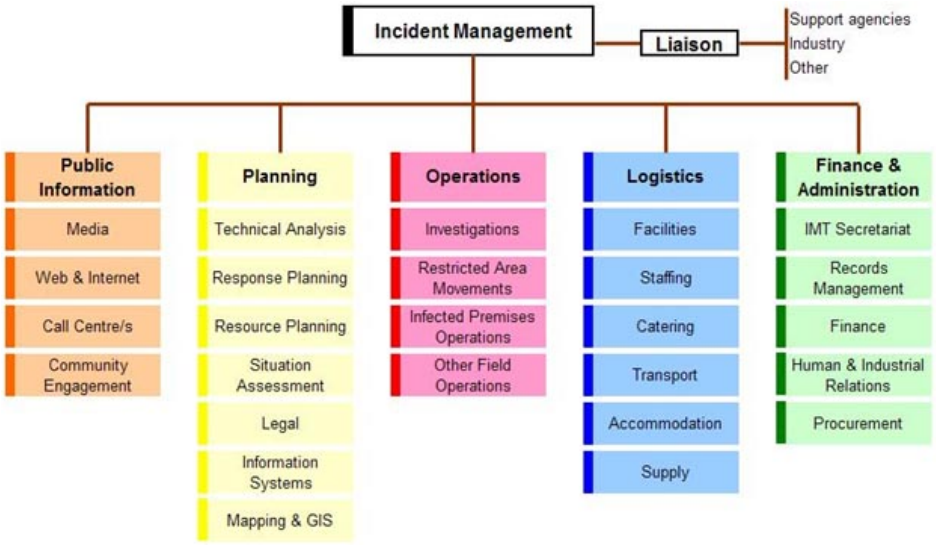

Figure 6: Biosecurity Incident Management System

The condition when the agencies of BIMS use biosecurity are as follows:

a. responding To biosecurity incidents give reponse
b. Development activities and conducting staff training
c. conducting evaluation and planning
d. On the basis of on elements of a biosecurity response conduct and design exercise
e. To biosecurity incidents planning for response

4.7 Challenges

Harmful technology has become more accessible and more available this is the major challenge of biosecurity (11). For improving the public health the globalization of technical and science expertise and biomedical advance have made it possible. To develop the biological weapons (12) this advance can easily take by terrorists this is also a very big challenge. Some challenges of biosecurity are as follows:

a. Cleanup of Environment
b. attribution
c. Management of Medical
d. Interaction
e. Approval and medical countermeasure development process
f. Availability of medical countermeasure
g. Diagnosis and detection
h. Dispensing of medical countermeasure

VI. CONCLUSION

Introduction of harmful organisms to plant, human and animal life and for stopping them to spread measurement refers as biosecurity. The emergencies in biosecurity can occur through weeds, pests and diseases; these are giving a negative impact on community, economy and environment.

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