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Can we tackle GM-animals?

by Jagath Gunewardene

The issues relating to the import of Genetically Modified Organisms (GMO's) to Sri Lanka is still confined mostly to the import of foods that are made with or made through GMO's, which are often referred to as GM-foods. The still unresolved issue of GM-foods has overshadowed the importance of how to deal with the living GMO's themselves, which are referred to by some as Living Modified Organisms or LMO's. Some time ago, there was speculation that a GM-Tilepie fish containing human growth hormone genes has been imported to Sri Lanka, the truth of which is not yet cicer. It only shows our vulnerability to an introduction of GM-animals and GM-plants. This shows how urgent and important it is for us to be prepared able and willing to tackle any possible introduction of any GM-animals.

The most often mentioned GM-animals are those fishes that have a gene which makes them grow faster and to a larger size. However, the first GM-animals were mice that were modified to carry genes that made them vulnerable to cancers. These were intended to be used as laboratory research tool. Several different types of mice with various disease-causing Genes have been developed and carry genes that cause ailments such as Alzimers. Another type of mouse has the entire genetic make-up (genome) of the HIV-virus in its genome. Other types of GM-animals include sheep, cattle, chicken, lobsters and even mosquitoes. The intentions behind the making these various modifications differ, from getting high yields (livestock, fishes, lobsters), controlling disease vectors (mosquitoes) to commercial production of chemicals (a line of sheep intended to produce human blood-lotting factor in milk).

The making of GM-animals have brought about a host of contentious issues, in Europe and USA. One kind of issues deal with the ethical and moral issues and the others deal with safety issues. The safety issues are of two types. One is the international or accidental release of these organisms to the environment and the possible implications. Several recent instances have shown that there is always the possibility of GM-animals escaping from the supposedly secure places where they are being kept and bred. The other important safety issues are how they could affect the health of human beings who consume products made by or from such animals. For example, a GM-Salmon that had been developed by the company A/F Proteins has been categorized as a new animal drug by the US Food and Drug Administration (FDA) due to the high levels of growth hormones present in the flesh.

It is clear that although there is no specific law to deal with GM-animals, the import of any is adequately covered by existing legislation. Unlike in the case of GM-food, there is even no need to have regulations. The regulations under Section 38 of the Fauna and Flora Protection Ordinance and Section 30 of the Fisheries and Aquatic Resources Act would be helpful additions but not essential to successful implementation.

The introduction of a GM-animal has to be done with some strict controls. These control measures have to be based on an assessment of possible and probable consequences of the release of the organism and such an assessment is known as a risk assessment. This is based by looking at the worst that can happen and how adverse this situation could possibly be. The control measures can be decided based on these possibilities. It is not an entirely satisfactory method of managing a problem because no one can possibly foresee all the various possible impacts. The main problem in conducting a risk assessment is the lack of relevant information. A certain amount of relevant information is needed to make even an assumption. In the absence of relevant information, the best course of action is to take a precautionary approach or to keep away those that one does not really understand.

It is therefore quite important to see whether Sri Lanka has enough legal provisions to prevent all unwanted introductions of GM-animals. There are no enactments specifically meant to deal with GMO's and the only act that even defines GMO's is the Plant protection Act. Even though, existing laws can be made use to regulate and prevent the entry of GMO's. All animals that have been genetically modified are either wild animals or domestic animals. For instance, all GM-fishes, lobsters and even mosquitoes are modified wild animals, as there are no domesticated breeds of such animals. One can argue that when a wild animal is modified by the inclusion of an alien gene (for example a human growth has none gene) it is no longer in wild animals as such. There on the other hand, it is a wild animal with a certain modification as it has all the traits found in its wild form plus the trait conferred by the new gene or genes. In the application of laws, it is possible to apply the laws relevant to the unmodified forms.

The importation of any wild animal, including fish and insects, is regulated by the provisions of the Fauna and Flora Protection Ordinance, No 2 of 1937 as amended. According to Section 37, any import of a wild animal can be done only under a permit issued by the Wildlife Caservation Department. The issuing of refusal of an import permit is at the discretion of the Director. This discretion is subject to only two limitations. One limitation occurs if the species is prohibited from being imported under Section 30 of the Fisheries and Aquatic Resources Act by a gazette notification. The other is the need to obtain a permit under the Plant Protection Act if there is a possibility of it being or becoming a pest. Under the wide discretion provided by the Section, the Director can request information on the animal that is going to be imported and take a decision. In addition, it is possible to make regulations under Section 38 (b) to prohibit the release of any GM-animals even if they are allowed to be imported.

These provisions do not apply to those that are modified domesticated animals. These are covered by the provisions of the Animal Diseases Act, No 59 of 1992. The definition of the term animal in this act covers cattle, buffalo, sheep, pigs, horses, dogs, cats and even birds and fishes. Therefore, it is wide enough to cover all animals that are outside the preview of the Fauna and Flora Protection Ordinance. According to Section 21 of this act, an animal can be imported to Sri Lanka only under a permit issued by the Controller of Import. This permit can only be issued if there is a recommendation by the Director of the Department of Animal Production and Health. The Director has the power of discretion to decide whether to allow or prevent the import of an animal and can well decide to refuse the import of a GM-animal.

The other relevant act in respect of the import of GM-animals is the Fisheries and Aquatic Resources Act, No 02 of 1996. This differs from the two previously mentioned acts by not having any enabling provisions, on in other wads, to issue a permit to import. It has only a restrictive provision in Section 30, which empower the minister to name species that should be prohibited from being imported. The definition of a fish under this act include all aquatic animals from invertebrates to mammals. Therefore, the provisions can be used to cover even GM-lobsters and not only the fish. This restriction would apply only if there is a gazette notification naming GM-aquatic animals that are prohibited from being imported.

It is clear that although there is no specific law to deal with GM-animals, the import of any is adequately covered by existing legislation. Unlike in the case of GM-food, there is even no need to have regulations. The regulations under Section 38 of the Fauna and Flora Protection Ordinance and Section 30 of the Fisheries and Aquatic Resources Act would be helpful additions but not essential to successful implementation. It is essential to have a clear policy as regards the introduction of GM-animals to prevent any in consistent and contradictory approaches by different bodies and for the more effective implementation of the law.

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