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Biotechnology and Social Aspect

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Biotechnology is an important promising young field. Modernists believe that emergence of biotechnology is the advent of DNA technology, which can have a great impact on the communities and their economic structures. Biotechnology has affected many countries enormously [1].

It entered the market through two approaches of producing new products (production processes) and expanding the scope of raw material production [2].

Development of biotechnology has resulted in many debates in various fields such as economics, law, politics, etc. Furthermore, some ethical issues and concerns raised about genetic engineering in particular [3].

The "biological maturity" index of a society, defined as the ability to identify and balance risks and benefits, is associated with the public awareness and education [3].

Some of the social issues raised by biotechnology include sustainability, naturalness, risk management, innovation paths, and economic justice [4].

Assessing the social aspect of biotechnology should take into account the attitudes and values that consumers have towards the food products and their nature of production, from food production to food processing and consumption [5].

Although the level of trust is not high in this technology, countries with more comprehensive regulatory decision-making process, especially in the process of risk analysis, were able to gain more trust from society [5].

The four main social concerns in this technology are environmental damage, bioterrorism, laboratory and production safety, as well as ethical issues.

It is very difficult to predict what will happen in the ecosystem after application of this technology. Governments are concerned that terrorists may use biotechnology to create infectious viruses or new toxins for which there is no cure. Although application of biotechnology as a weapon is prohibited by the Geneva Conventions, bioterrorists will be able to transmit diseases and viruses in a variety of ways. Considering that some new technologies such as nanoparticles have their own consumers before being adequately tested for market safety, concerns exist about harmful factors that have not yet been identified. Many ethical questions exist about licensing of genetic inventions and making genes, which may be against the moral or religious beliefs of a significant number of people. Moreover, this technology is faced with other ethical concerns including how scientists use humans in clinical trials without relying on the

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results or side effects of the technology studies. Use of animals as biotechnology subjects may also lead to manipulation of animal genes in favor of human life [6].

In such a challenging technology assessment from a community perspective, Social Impact Assessment (SIA) can be one of the public policy tools. This tool is used to predict, monitor, and control the future social problems caused by such technologies. The SIA tools may help the third world countries to control adverse and unsustainable impacts by identifying the social impacts of new technologies. However, achieving success in controlling the adverse and unsustainable impacts of such technological developments without structural changes is still doubtful for the developing countries [7].

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