

Shaikh Mohd Saifuddeen bin Shaikh Mohd Salleh

- Senior Fellow, Centre for Science and Environment Studies, Institute of Islamic Understanding Malaysia

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The Voice of Islam for Biotechnology

Shaikh Mohd Saifuddeen bin Shaikh Mohd Salleh and Mahaletchumy Arujanan

The voice of Islam regarding knowledge, science, and technology has been clear from the time the religion was revealed to Prophet Muhammad almost 1,500 years ago. The first revelation as stated in verses 1 to 5 of Surah al-'Alaq says: "Read! In the name of thy Lord and Cherisher, Who created. Created man, out of a (mere) clot of congealed blood. Proclaim! And thy Lord is Most Bountiful. He Who taught (the use of) the pen. Taught man that which he knew not."

This verse emphasizes the need to pursue and have mastery of knowledge. A number of significant messages can be gleaned from this first revelation:

- Islam created and promoted one of the most vibrant civilizations in the world and it is believed that the Islamic civilization had created a second agricultural revolution as a number of new technologies and innovations in agriculture were introduced, resulting in an important transformation in this sector.
- This verse contains a scientific message in the form of a biological information with regard to the development of the embryo. This information was verified to be accurate by anatomists in the early 20th century. This further signifies the voice of Islam with respect to the importance of the biological sciences.
- The word *iqra'* in this verse is a directive for mankind to read. Reading is the key that can unlock many doors of knowledge. When reading becomes a culture, it would empower mankind with a vast amount of knowledge that has the ability to revolutionize the world.
- The word *qalam* in this verse is translated as "the pen." This gives the signal that, aside from reading, writing is equally important. One of the effective ways to disseminate knowledge is through writing, as ideas and thoughts are documented for others to dissect.
- Finally, the verse 5 of Surah al-'Alaq which gives the clear message to Muslims that all know-ledge are made possible by the Will of God. For Muslims, all forms of knowledge belong to God. It is God who wills for mankind to know something through observation, trial and error, and research. In other words, knowledge, including biotechnology, are "taught" by God to mankind.

In essence, the first revelation of the Quran shows that Islam puts great emphasis on the pursuit and mastery of knowledge. There are many forms of knowledge, and it is the responsibility of Muslims to have someone within their midst to have mastery in the various branches of knowledge, including biotechnology.

Declaration on Biotech

Biotechnology is a branch of knowledge that is important in the modern world. Its applications can be found in many sectors – agricultural, biomedical, pharmaceutical, food production, and environmental sectors, to name a few. Such wide-ranging applications highlight the need for Muslims to view biotechnology as a critical branch of knowledge and to strive to pursue and master this knowledge.

Realizing this importance, the Islamic Academy of Sciences (IAS) drew up the “IAS Rabat Declaration on Biotechnology and Genetic Engineering for Development in the Muslim World”, which was issued way back in October 2001.

The Declaration, among other things, noted the following:

- The applications of biotechnology could have far-reaching effects and favorable impact on the developing countries, many of which suffer from large and rapidly increasing populations, chronic food shortages and malnutrition, poor health, and profound environmental problems.
- Biotechnology and genetic engineering are areas where rapid and meaningful advancement can be readily made by the Organization of Islamic Countries (OIC), especially in attaining food security and promoting the pharmaceutical industry.
- Activities being carried out by many governments, academic institutions, and non-government organizations in the fields of biotechnology and genetic engineering, especially in agriculture, are appreciated by IAS.
- Advancement in biotechnology and genetic engineering underlines the importance of investment in basic sciences, which are the backbone of sustainable science and technology advancement, especially as there is very little biotechnological research and development in the developing countries.
- The significance of the sequencing of the human genome is acknowledged as an event compared to man’s landing on the moon and described as a milestone in the history of science that will enhance research in human biology focused on diseases such as cancer, Alzheimer’s, diabetes, and cardiovascular disorders.
- IAS takes into consideration the Universal Declaration on the Genome and Human Rights, adopted by the General Conference of UNESCO in 1997, which is the first worldwide instrument in the fields of biology, medicine, and genetics.

The IAS also highlighted some problems faced by Muslim countries vis-à-vis biotechnology in the 2001 Rabat Declaration. These problems include lack of a long-term biotechnology policy in many OIC countries, the small number of students enrolling in biotechnology-related disciplines, the lack of adequate infrastructure for biotechnology research in most OIC countries in order to sustain this fast-growing sector, the absence of coordination between agencies involved in biotechnology research and application, and the lack of up-to-date curricula for biotechnology as well as shortage of qualified teaching staff. The IAS proposed that an Islamic biotechnological fund be established in order to help “poorer OIC countries to transfer biotechnology know-how from other countries, and develop and utilize it to achieve national food security.”

Aside from the systemic problems identified by the IAS, it is also interesting to note that major breakthroughs in molecular biology and genetic engineering have raised many legal, ethical, and social questions. Such legal, ethical, and social dilemma are given serious attention by Islam and Muslim scholars. It is important to ensure that

biotechnological development would bring forth benefits to mankind and the environment and not the opposite. On this matter, the IAS proposed that a multidisciplinary group made up of “scientists, technologists and Islamic scholars be set up to study the various facets of social and ethical issues.”

It is also equally noteworthy that one point stressed in the Declaration was the recognition that genetic engineering has been defined as an unnatural insertion of a foreign sequence of genetic codes in the midst of the orderly sequence of genetic codes developed through millions of years, which is a profound intervention, with unpredictable consequences. Such sensibility would act as a reminder of the importance of not causing unwanted effects due to biotechnological developments.

It is not surprising then to see the IAS proposal for a moratorium on “the release of genetically engineered organisms and on the use of genetically engineered (GE) foods, until sufficient knowledge has been acquired to make it possible to judge how far it is safe for human health and the environment to exploit this technology. This is the “prevention is better than cure” approach suggested by the IAS.

Moving Forward

In essence, Islam stresses the need to preserve a harmonious three-dimensional relationship – i.e., relationship between mankind and God, relationship among mankind, and relationship between mankind and the environment. We can factor in biotechnology into this three-dimensional relationship to see how Islam views biotechnology.

Relationship between mankind and God: While “new” knowledge is welcomed by believers of Islam in line with the spirit of iqra’, Islam also stresses the fact that all knowledge, including biotechnology, belongs to God, and only by God’s Will is mankind able to obtain knowledge.

With regard to biotechnology, mankind has been given the tool to do many things that involve manipulation at the biomolecular level. From the perspective of Islam, what is important is for mankind not to have the inclination to “play God” or to “deny the existence of God.” This is crucial in order to ensure that the relationship between mankind and God is protected. In other words, believing in what biotechnology can do for the betterment of mankind should strengthen one’s belief in God.

Relationship among mankind: From Islam’s point of view, biotechnology should not be the technology of the elite few. The benefits of biotechnology should not be accessible only to certain countries, certain companies, or certain individuals, as this would be tantamount to monopoly, which is not allowed in Islam. For Muslims, whatever is developed should be beneficial for the greater good of mankind.

Relationship between mankind and the environment: Biotechnological advancement has the potential to either improve or damage the environment. Believers of Islam are reminded of the need to ensure that the environment does not become a victim of mankind’s greed.

Take Home Message

Biotechnology is a branch of knowledge that is important to mankind. It is therefore crucial that this field be developed. If its development falls within the ambit of the three-dimensional relationship mentioned above, Islam permits and supports it. What Islam stresses is the need to be cautious so as not to affect this all-important relationship.