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Ten Reasons Why Asian Crop Science Must be Reinforced

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The issues of sustainability have recently become common among a wide range of population as the Sustainable Development Goals of the United Nations (SDGs) have gained global recognition. The issues are increasing its urgency and intensity. Climate change, for example, is now being called as "climate crisis" because of frequent extreme climate events, which in turn strongly affect agriculture and food security. Among the SDGs, sustainable agriculture is undoubtedly one of the most critical issues for the existence of human beings. Thus, the United Nations will hold a Food Systems Summit in September 2021 in order to foster innovative ideas and prompt collective actions worldwide.

Asia is well known for being the origin of human civilization and for its long history of crop cultivation. For example, sustainable rice paddy cultivation has been continuing for thousands of years, and wheat is said to be one of the first crops cultivated by human beings in the Middle East. However, Asia, which accounts for about 60% of the world's population, has always been suffering from famines and starvation. Although Asia has partly succeeded in providing enough food by introducing modern technologies, the region as a whole has gradually become dependent on imported food. And the region's high population density and intensive farming systems have turned agriculture-related environmental issues into a most pressing concern in recent years. In addition, Asia, with its diversified natural conditions — from dry to humid, from continental to archipelagic, and from cold to hot temperature — is a showcase of cropping systems, and consequently, a showcase of food-related problems such as poor soil fertility and limited water resources, weeds, pests, and so on. We Asians must find solutions against these various problems by ourselves as nobody else has enough capacity and experiences to provide the proper answers. Without these answers for Asia, the rest of the world would not be able to attain the goal of sustainable agriculture.

Crop science, as an academic field that deals with the relationships between plants species and human beings, can provide objective and technical solutions — namely, proper land use, proper chemical input use, proper water use, proper energy and labor use, and the proper combinations of the above — to most of the aforementioned problems. Furthermore, as a knowledge base of holistic wisdom accumulated in the long history of humankind, crop science can provide effective answers to complicated questions regarding human-nature relationship, namely, how to adapt to extreme climate, how to conserve biodiversity and ecosystem, how to optimize food and dietary culture, and eventually, how to maintain human society. Thus, there are plenty of reasons why Asian crop science should be energized more. It is natural to say, in the year of the Food Systems Summit, that Asian crop scientists should lead and guide the world towards creating sustainable and harmonious food systems.