

## **Republic of Korea's submission of views and information on Digital Sequence Information to FAO**

### **1. Terminology used**

There is international controversy over the scope and definition of the term, 'Digital Sequence Information (DSI)', which partly arise from ambiguity of the term itself. DSI is not generally accepted term in scientific community, but rather a placeholder term. However if it would cause confusion, it is best to be replaced with more accurate, appropriate term for the sake of communication and discussion.

What is being referred to as DSI, as far as how we understand, is sequential order of genetic material (DNA or RNA polymer), not some sequence of numbers or events. So it should best be phrased 'genetic sequence' to clarify the meaning. It should not necessarily be in digital format, so the phrase 'digital' shall be omitted. Also, we suggest using 'data' instead of 'information' as 'information' often refer to broader meaning, thus increasing ambiguity of the term. Sequential order of genetic material, such as ATGCCTCCAGT, clearly fits with definition of 'data'. In conclusion, Republic of Korea suggests using alternative term, 'Genetic Sequence Data(GSD)', for further discussion on the related issues in ITPGRFA. We will use the term GSD for the rest of this document.

We should also point out that GSD is not equivalent to genetic material. Article 2 of CBD defines genetic material as 'any material of plant, animal, microbial or other origin containing functional units of heredity', which is clearly not the case of GSD. It is mere intangible data of nucleotide sequence order. Also, since CBD defines genetic resource as 'genetic material of actual or potential use', GSD is not genetic resource as well.

## **2. Actors involved**

The key actors regarding this issue are obviously researchers. Vast majority of GSD is generated and used by researchers and it has become quintessential part of biological studies. It should be noted that there are serious concern among researchers on this issue. GSD is so widely and frequently used by researchers worldwide that any restriction on using and sharing of GSD or even possibility of getting into legal affairs will lead to catastrophic consequence in the field of science. Scientists also stress that studies using GSD expand our understanding on biological diversity and it provides helpful tools, such as DNA markers, for conservation and sustainable use of biological diversity.

Other important players are online database providers, such as academic institutions, journals, governmental agencies. Most of such databases are freely accessible, benefitting researchers all over the world. However, should ABS measures be placed on GSD, many of such open DBs are likely to be closed in order to avoid legal trouble. Such will lead to even greater knowledge gap across the globe and hinder capacity building of researchers in developing countries.

## **3. Types and extent of uses of GSD on PGRFA and its relevance to food security and nutrition**

GSD offers important tools for identification, breeding and conservation of plant genetic resource for food and agriculture. Aforementioned DNA markers, for example, are used to identify species and varieties, predict traits, increase breeding efficiency and select conservation specimen pool to maximize genetic diversity. GSD is also extensively used in the field of fundamental science including taxonomic, molecular and ecological studies. GSD is key to share and verify scientific discovery as well, so many journals require submission of GSD analyzed in the study.

GSD used for crop breeding help enhance food productivity, thus making it more accessible, available and affordable. Also it can be used to select traits for drought, pest and other resistance or higher nutritional value, hence assist stable food production and nutrition. So, GSD contribute to all four pillars of food security and nutrition which are key missions of FAO.