

## Special Event on Genomics Information

# Genomic information: technological & institutional dimensions

## Scoping study:

## Opportunities for benefit sharing

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# Outline

- ❑ Benefit sharing context
  - General interviewee feedback
  - Sources of value
  - Modes of infrastructure
- ❑ Benefit sharing examples
- ❑ Potential lessons from study

# General interviewee feedback

## ❑ Viability of Pooling of Benefits

- Pooling as a viable mechanism to thinking about benefits
- Difficulty of monitoring, linking provenance to outputs, distributed beneficiaries
- Pooling as a recognized research practice
- Distributed value of data and information – hard to link contribution with outcome and benefit
- The value is in pooling – value from sharing and increasing contribution

# Sources of value

- ❑ Diverse perspectives on value of DSI and research in synthetic biology
  - Innovation and accelerated breeding
  - Understanding sequence and part functionality
  - Plant system understanding
  - Education and exploration
  
- ❑ None of the interviewees reported that monetary benefits had already been shared with providers

# Modes of infrastructure

## ❑ High entry cost

- Significant gaps – physical and human capital
- Approach: new facilities and equipment, institutional relationships, curriculum, short term training, etc.

## ❑ Low entry cost

- Bottom-up perspective
- Approach: Education, exploration, innovation, competition

## ❑ Flexible design, technology and goal dependent

- Continuum, initial infrastructure & goal dependent
- What different capacity building efforts can be established and sustained to maximize research engagement?

# 1. Linking benefits to DSI access

- ❑ *ex ante* ABS agreements - Pandemic Influenza preparedness (PIP - WHO) make vaccines available to provider countries in return for sharing genetic sequence data for disease prevention
- ❑ *ex ante monetary benefits sharing* for investment in technical and analytical capacity in-country
- Flexible investment model – clinics for analysis and processing of samples.
- Easier to accomplish when genetic resource is clear, transfer is obvious, key players identified

## 2. Grant based funding

- ❑ Model 1: Hard infrastructure combined with long-term investment in training (traditional capacity building approach)
- ❑ Model 2: Local problem oriented approach - low or flexible infrastructure; contingent resource needs.
- ❑ Possible approaches:
  - One window in call for proposals under the benefit-sharing fund to invest in centers for analysis
  - Partnering with national or regional funding agencies for investment in buildings and equipment

# 3. Facilitated Access

- ❑ Recognized value of 'open access' (journals & DSI)
- ❑ Formalized access through institutional design
  - Formal mechanisms to build an open repository of sequences, 'parts' and information. Parts as technologies for transfer.
  - Designed as resource to attract / engage plant scientists to develop a community of researchers.
  - Orientation toward balancing public contribution and opportunity for obtaining intellectual property rights.
- But...access is capacity dependent; ...limited consideration of equity and fairness across different levels of capacity;
- Potential in designing mechanisms with existing actors for better inclusion of equity considerations for access.



## 4. Research collaboration

- ❑ Collaboration can contribute to facilitated access, information sharing, capacity development and technology transfer.
- ❑ Model 1. Traditional science collaboration – often driven by research priorities of higher income countries.
- ❑ Model 2. Emergent technology collaboration – research challenges to encourage exploratory investigation and innovation.
- ❑ Criticality of ‘local’ research questions, flexible infrastructure approach.

# 5. Education and training

## □ Traditional approaches

- In country training: expert visits; short-term training
- Out-country training: longer term stays in universities or research institutes

## □ New models:

- Challenges - example of iGEM – kits for low infrastructure, group exploration and innovation, usually young people

# Summary

Ongoing technology  
& institutional  
assessment

Clarify  
problems and  
infrastructure  
needs

Develop array  
of benefit  
sharing options

Identify  
alternative  
sources of value

Establish new  
partners &  
resource  
streams



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**Thank you!**

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