

recognize, me included, that the GCP is really positioned to become an 'umbrella' network that for the first time links genetic diversity, gene discovery, and molecular breeding activities at NARS all over the world," said de Vicente.

Already the workshop has fomen ted activity. Following her participation in the workshop, Rose Kingamkono of the Tanzania Commission for Science and Technology, invited fellow participant Karl Kunert of the University of Pretoria in South Africa to serve as a resource person for a course her institute is offering in 2005 on biotechnology tools for the management of biodiversity. After he returned home,

Cho Eun-Gi, Director of the Genetic Resources Division of the National Institute of Agricultural Biotechnology in South Korea, put together a proposal for capacity building projects in partnership with the GCP for his region.

"One workshop participant was telling me about how she sells chickens and eggs on the weekends to raise money for her institute," de Vicente recounted. "It's inspiring to work with a group of people so dedicated to making a difference, and they see the GCP as a vehicle to increasing the impact of their work."



Consortium members

Agropolis • Brazilian Agricultural Research Corporation (Embrapa) • Chinese Academy of Agricultural Sciences (CAAS) • Cornell University • International Center for Tropical Agriculture (CIAT) • International Maize and Wheat Improvement Center (CIMMYT) • International Potato Center (CIP) • International Center for Agricultural Research in the Dry Areas (ICARDA) • International Crops Research Institute for the Semi-Arid Tropics (ICRSAT) • International Institute for Tropical Agriculture (IITA) • International Plant Genetic Resources Institute (IPGRI) • International Rice Research Institute (IRRI) • John Innes Centre • National Institute of Agrobiological Sciences (NIAS-Japan) • Wageningen University • Africa Rice Center (WARDA)



Subprogramme 5: Capacity Building

A Strategy for Strengthening Scientific Capacity in the Developing World

For many diverse reasons – not least, funds – most developing countries do not have the scientific infrastructure or trained staff necessary to apply advanced genomics. Unfortunately, this means that the scientific institutions in closest proximity to struggling farmers and poor rural areas are the least equipped to take advantage of technological revolutions that may help those people. The founders of the Generation Challenge Programme (GCP) knew that to make lasting impacts, we must create a global environment that promotes scientific innovation by national agricultural research and extension systems.

Products produced through the genomics revolution will not make it to our developing world clients unless we improve the capacity of the national agricultural research systems (NARS) to participate in the development and delivery of those products. Nor will the GCP's research agenda be effective without the participation of the NARS, whose regional networks, experimental plots, and extension programs are essential components of our activities.



Generation Challenge Programme

CULTIVATING PLANT DIVERSITY FOR THE RESOURCE POOR

Contact: Robert Zeigler, Director (r.zeigler@cgiar.org) • Jenny Nelson, Communications Coordinator (j.nelson@cgiar.org) • www.generationcp.org

Subprogramme 5 provides a range of capacity building services to NARS, including technical courses, workshops, research fellowships, travel grants for participation in international conferences, policy and intellectual property briefings, and training materials. Led by Carmen de Vicente, a molecular geneticist with the International Plant Genetic Resources Institute (IPGRI), Subprogramme 5 bridges the other subprogrammes to ensure that NARS will be able to use the tools and technologies developed by the GCP and participate in their development.

The countries of the developing world differ widely in their scientific strengths and weaknesses. Different rates of development and investment have launched some countries into the “big leagues” of R&D, while others lag decades behind. The GCP’s capacity building strategy takes this into account by targeting advanced training to more sophisticated institutions and more basic resources to those less advanced.

Given the diverse demand in developing countries for capacity building in utilizing genetic resources, where should the GCP start? In August 2004, the GCP convened a

workshop in Costa Rica to ascertain the capacity needs of the NARS in the context of the GCP. Assessments were made of germplasm collection and management, genotyping and phenotyping, molecular breeding, comparative genomics, and data analysis, among other areas. Workshop participants were mainly senior research managers from the national agricultural research institutes of 23 developing countries in Africa, Asia, Latin America, the Middle East, and southeastern Europe. The overall goal of the workshop was to identify the global, regional, and local needs of the NARS community in order to fully participate in the GCP research activities. The workshop’s most important output was recommendations on how to meet those needs in terms of training, assistance, and support to enable the development and delivery of improved crops to the resource poor.

“Most of these people had never participated in a meeting with such a mix of institutes, cultures, and perspectives,” Carmen de Vicente noted. “And most had never done a capacity-building needs assessment in their own institute, so it was an extremely eye-opening and valuable exercise.” By the end of a week of intense brainstorming, the participants had developed a clear set of global and regional priorities for capacity building, and many had plans to link with other participants – their new friends – in training and research activities already underway in their own countries.

Obvious differences among the countries’ needs emerged at the workshop. Brazil, Thailand, the Philippines, and Egypt, for instance, already have substantial capacity and had very targeted requests for building skills in specific technologies, while many sub-Saharan African countries observed large knowledge and proficiency gaps that need to be addressed before moving forward. However, a clear roadmap with explicit activities was hammered out.

The “wishlist” for the germplasm management and phenotyping activities in Subprogramme 1 comprised training courses for genebank managers and plant breeders in sampling techniques and recording plants’ performance in the field. For Subprogramme 2 (genomics), participants concluded that because of the prohibitive cost of sophisticated equipment, the best option for promoting functional and comparative studies was regional research hubs, with lab and analysis equipment and phenotyping facilities available for use by regional partners. The molecular breeding activities of Subprogramme 3, in which NARS’ involvement is crucial, require intensive training of NARS scientists in linking molecular and conventional genetic data. Another gap identified across all regions was in communicating and educating the media, policymakers, and the general public about genetic engineering and transgenic crops. For Subprogramme 4 (bioinformatics), as intrigued as the participants were by the mindboggling potential of high performance computing and advanced networking, the basic requirements of those systems—broadband and dependable internet access—are lacking in many developing countries. A participant from a national genebank reported that there are only two Internet portals for all 70 employees at his institute.

The participants also stressed the importance of integration across research disciplines. They observed that the way many scientific programs are structured encourages tunnel vision: the better you are in your discipline, the more successful you are as a scientist. But to actually work toward solutions for the poor requires a broader base of knowledge and more creativity.

In addition to producing the guiding document for the Capacity Building Subprogramme, the workshop ignited a real sense of excitement among the NARS and GCP representatives who attended. “Everybody seemed to



THE GENERATION CHALLENGE PROGRAM
NEEDS ASSESSMENT WORKSHOP
SANTO DOMINGO DE HEREDIA, COSTA RICA
2-6 AUGUST 2004

Top: Anwar, Kunert, Gi-Park, Delgado, Pekic, Eun-Gi, Lopes, Gandarillas, Nelson, Alhassan, Ndjiondjop, Kalb, Malekano, Diaz, Ebert, Kingamkono, Espino, Zeigler, El-Khishin, Asafu, Everard.

Bottom: Wickham, James, Atehortua, Muriel, Fulton, de Vicente, Tanticharoen, Thijssen, Strajeru, Kalazich.