

GENERATION: Cultivating Plant Diversity for the Resource-Poor

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Annual Research Meeting
September 12–16, 2007
Kopanong Hotel & Conference Centre



GCP today

- ◆ Brief introduction of the Programme
- ◆ GCP Strategy Framework
 - ◆ GCP research approach
 - ◆ Presentation of the new strategy framework and reference studies
 - ◆ Impact on research priorities
 - ◆ Practical examples
- ◆ Project management
 - ◆ Product management and delivery
 - ◆ Data release/quality and template
 - ◆ IP
 - ◆ Report
 - ◆ Reviews
- ◆ Finance
 - ◆ Update
 - ◆ Third competitive call
- ◆ ARM
 - ◆ Format
 - ◆ Objective

GCP in brief

- ◆ Launched in August 2003
- ◆ 10-year framework (2004–2008; 2009–2013)
- ◆ About US\$15M annual budget
 - ◆ 10% Management cost
 - ◆ 75% Research
 - ◆ 15% Training and capacity building
- ◆ Major donors
 - ◆ European Community
 - ◆ DFID
 - ◆ The Bill & Melinda Gates Foundation
 - ◆ World Bank
 - ◆ Switzerland
- ◆ Target areas: Marginal drought-prone environments
 - ◆ Africa (SSA)
 - ◆ SE Asia
 - ◆ LA
- ◆ Mandate crops (CGIAR)
- ◆ A CGIAR Challenge Programme hosted at CIMMYT



The GCP Mission:

To use advanced genomics science and plant genetic diversity to overcome complex agricultural bottlenecks that condemn millions of the world's neediest people to a future of poverty and hunger

The GCP Vision:

GCP's vision of the future is one where plant breeders have the tools to breed crops in marginal environments with greater efficiency and accuracy for the benefit of the resource-poor farmers and their families

Who we are:

GCP is a multinational, multi-sector and multidisciplinary 'true' collaboration in the plant sciences



One of our strengths:

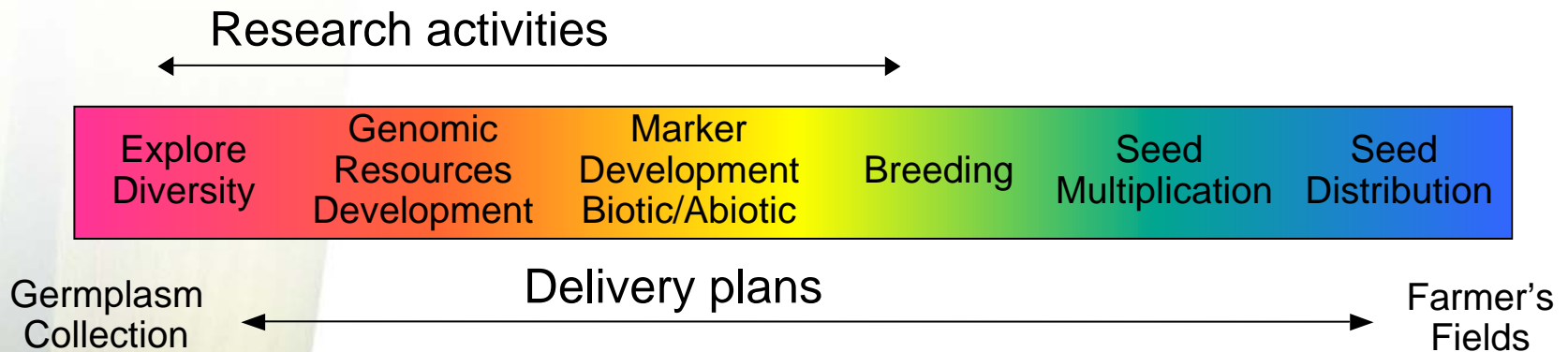
Bridge the gap between basic and applied agricultural science to provide new tools for plant breeding

ARI, CG and NARS involved together in most research projects

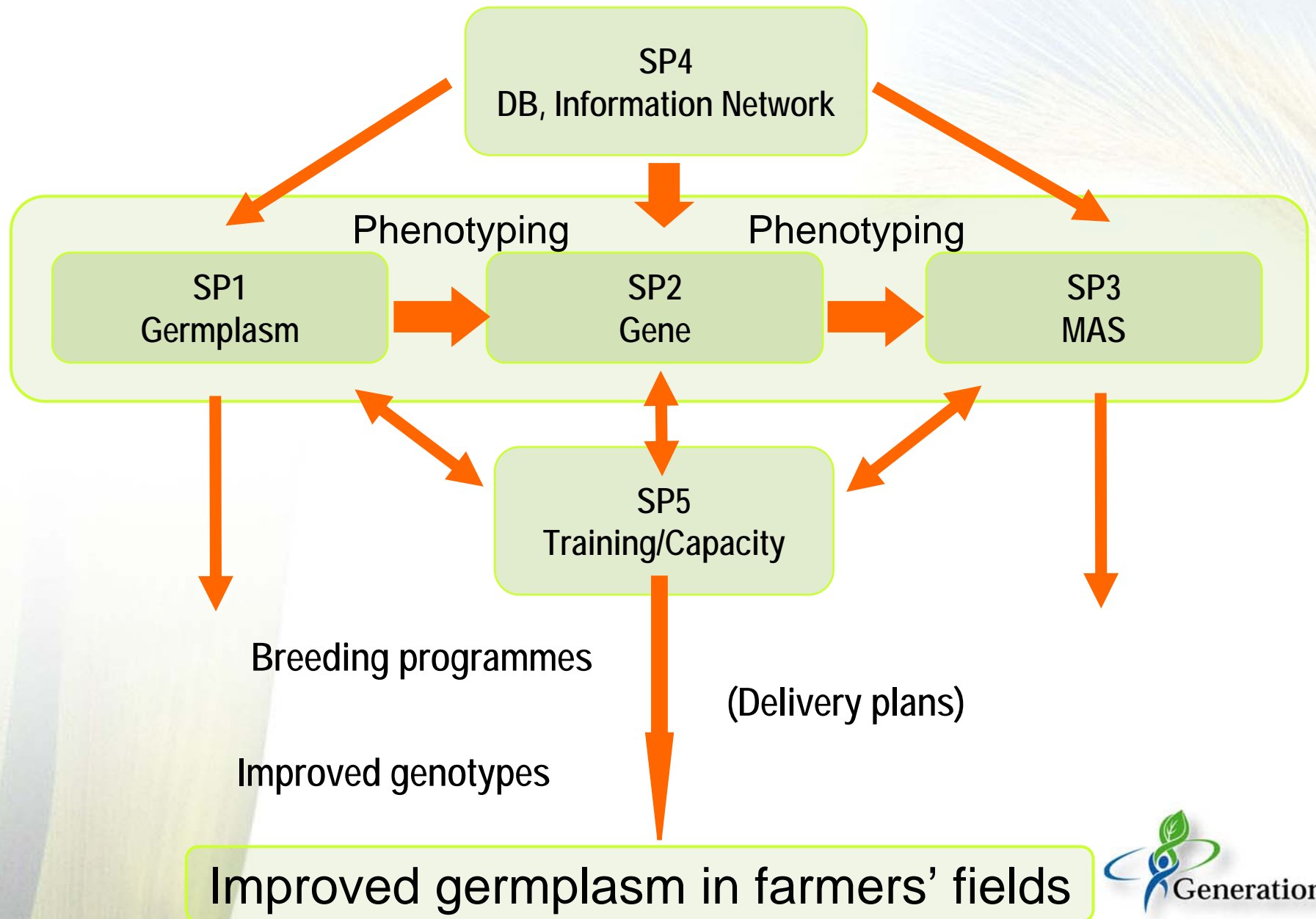
Consequence:

Every GCP project must be conducted with a very clear vision of what the products are and who are the potential users

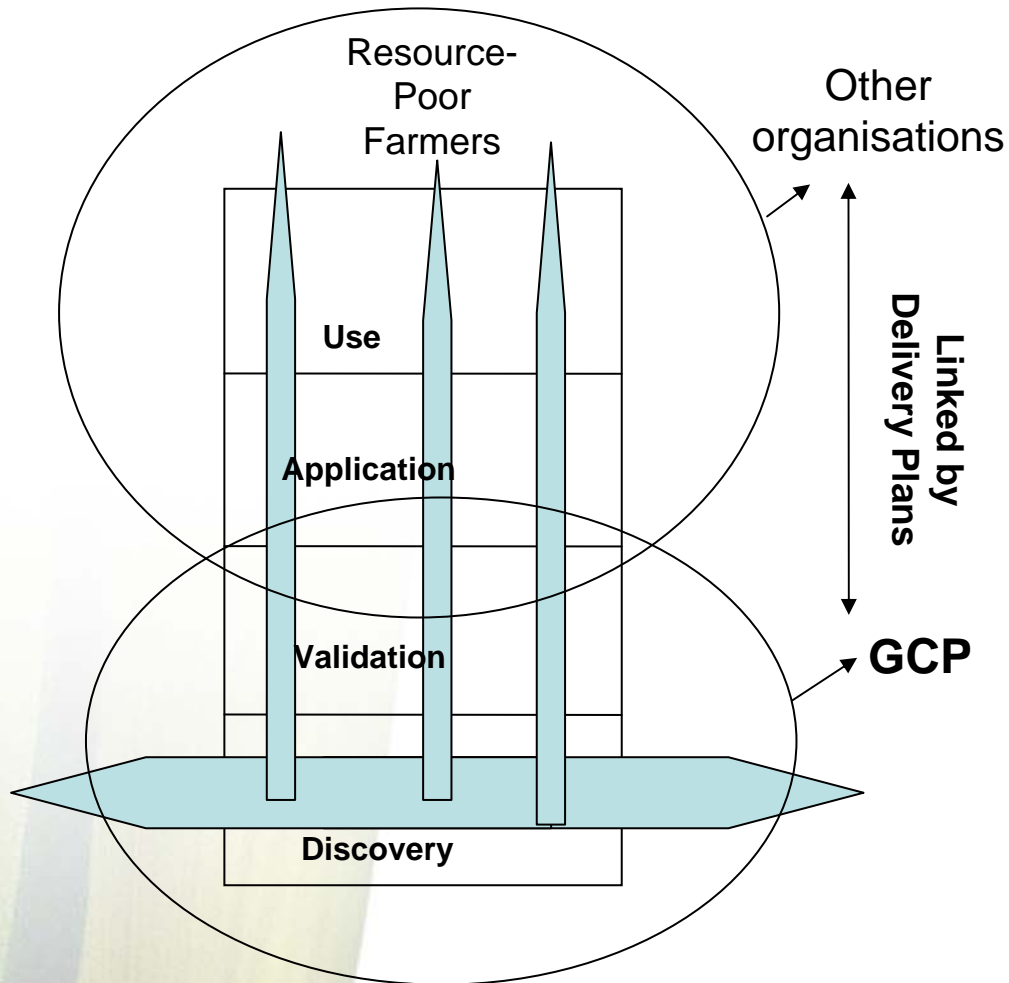
Delivery plans, participatory research



The GCP Research Structure



GCP Research Approach



Research approach aligns with our Mission

- 1) Provide access to and promote the use of genetic diversity

Discovery

- 2) Develop a public platform of genetic and genomic resources and tools,

Discovery

- 3) Generate and apply knowledge across crops, and demonstrate the potential of comparative genomics

Discovery

- 4) Use genetic diversity and advanced science to develop products for plant breeding programmes

Validation



GCP New Strategy Framework

A refinement—not a revision—of our current strategy

- ◆ GCP has a strategy (GCP proposal February 2003), and the strategy and structure are serving GCP well
- ◆ Need to better define our target environments and related crops
- ◆ Need to clearly define and support major themes of research: we are not 'only' set of research projects
- ◆ Implementation of our strategy based on :
 - ◆ Guiding principles
 - ◆ Research priorities
 - ◆ Resource allocation and decision pathway
- ◆ **Therefore, two components:**
 - ◆ A strategic framework: to refine the principles of our strategy, and describe the resource allocation and decision pathways (approved by the PSC, Nov. 2006)
http://www.generationcp.org/comm/gcp_framework_final.pdf
 - ◆ Reference studies: highly useful resources for the Management Team in its decision-making, priority setting and partner identification

Strategy Framework based on clear guiding principles

- ◆ Poverty and drought are most important driving factors for determining GCP's target farming systems
- ◆ Must support broad 'mainstream' of projects that clearly address plant breeding in marginal, drought-prone environments
- ◆ Must remain flexible to capture emerging opportunities
- ◆ Supports 'winners' -- those projects with high potential to make high impact in our target farming systems
- ◆ Demonstrate the power of GCP approaches through clear examples of success.

Purpose of the “Reference Studies”

Expand the knowledge base to allow for further focus, and provide resources for the Management Team in its decision-making on:

- ◆ Basic information about the distribution of poverty, drought, and crop productivity to select a set of priority farming systems and crops

Targeting Impacts study

- ◆ The state of technology available in the selected crops

Survey to evaluate the genetic and genomics resources

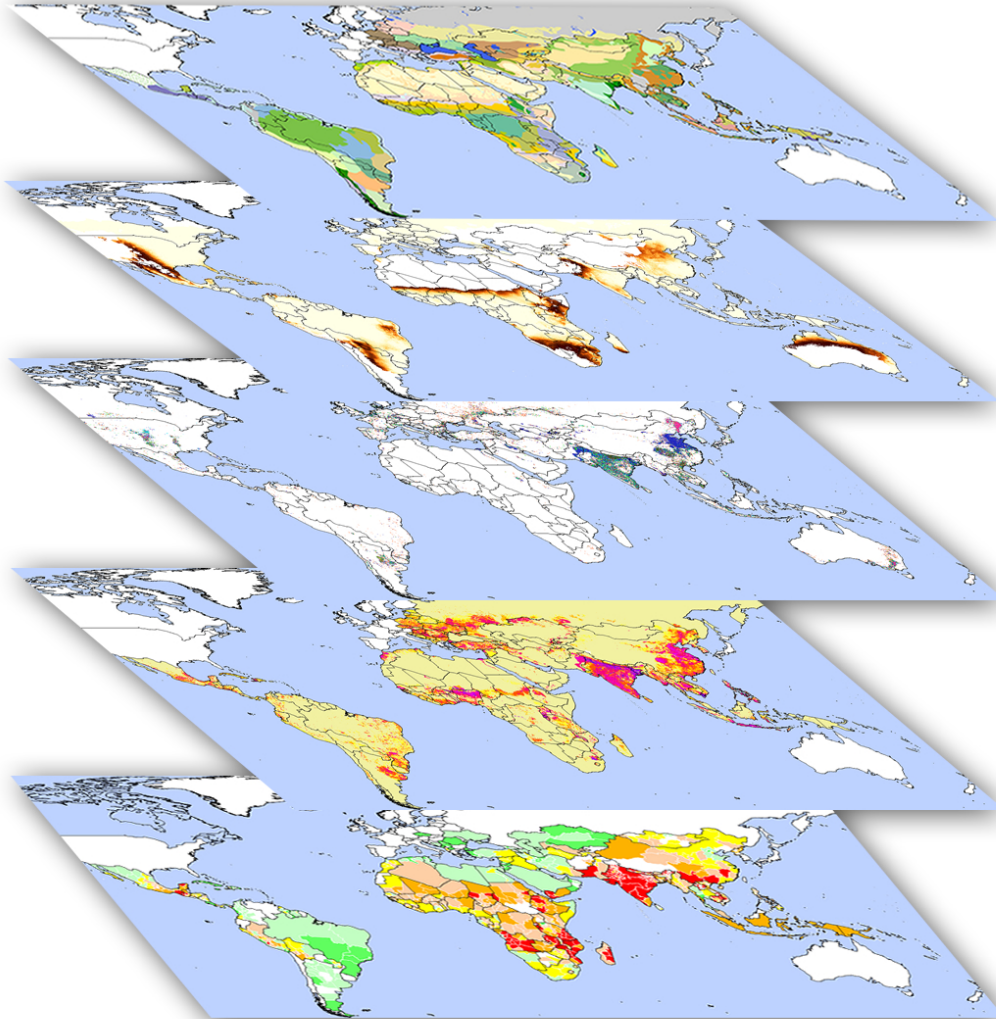
- ◆ The capacities of the institutions and organisations available to form partnerships to undertake the work

Survey to evaluate the local infrastructure and human resources

- ◆ Relevance and potential impact of our proposed work

Ex-ante impact analyses

Research focus: Analysis by farming system (G Hyman et al.)



Farming systems

Drought

Irrigated area

Stunted children

GCP crop area

High-impact systems

System	Stunt	Crops	fsg	fsr
S As rice wheat	28.3	<i>wheat, rice, pulses (chickpea), maize</i>	1	1
S As rainfed mix	24.5	<i>rice, millet, sorghum, pulses (chkp), wheat, bean, groundnut, maize</i>	3	2
E As upland int mix	15.4	<i>rice, maize, wheat</i>	8	3
E As lowland rice	13.4	<i>rice, wheat, maize, sweet potato</i>	6	2
S As rice	11.7	<i>rice, pulses (chickpea)</i>	27	6
Af cer-root	6.3	<i>sorghum, millet, maize, groundnut, pulses (cowpea), cassava, sweet potato, rice</i>	7	3
Af maize mix	6.3	<i>Maize, cassava, pulses (cowpea), sorghum, musa, sweet potato, bean, millet, groundnut</i>	10	5
S As highland mix	5.2	<i>rice, wheat, maize, pulses (chickpea), millet</i>	21	5
Af root	5.0	<i>maize, cassava, rice, sorghum, sweet potato, groundnut, millet, bean, musa</i>	23	8
S As dry rainfed	3.6	<i>millet, sorghum, rice, pulses (chickpea), groundnut, wheat</i>	11	3
Af ag-pas mil sor	3.1	<i>Millet, sorghum, pulses, groundnut, maize, cassava</i>	2	1
Af high temp mix	2.8	<i>maize, wheat, sorghum, barley, millet</i>	25	9
LA maize beans	2.8	<i>maize, beans, sorghum</i>	16	3
E As temp mixed	2.6	<i>Maize, wheat, rice, groundnut</i>	5	1

Research Priorities

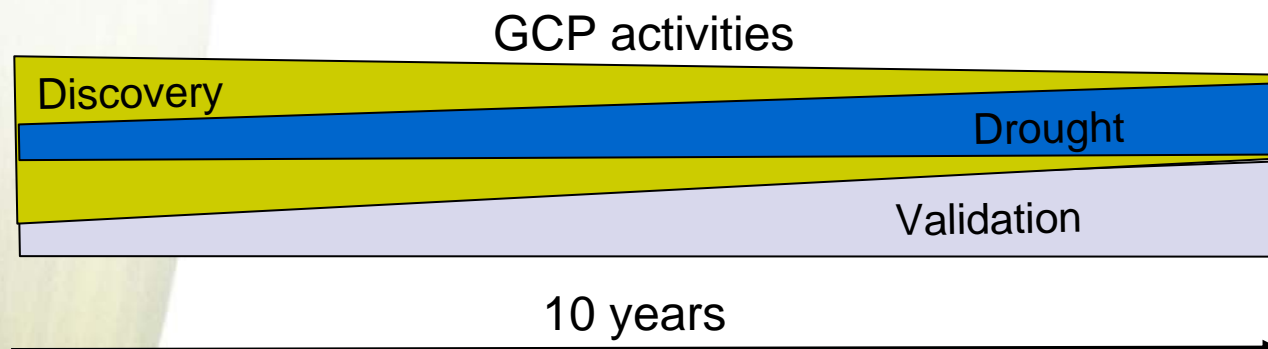
The GCP will continue to invest in both:

Discovery

- ◆ Germplasm characterisation of CGIAR crops is part of our mandate
Refine the reference sets, maintain mutant collection
- ◆ Trait/gene/pathway discovery activities will continue
Genetic basis for drought tolerance is still little understood

Validation projects

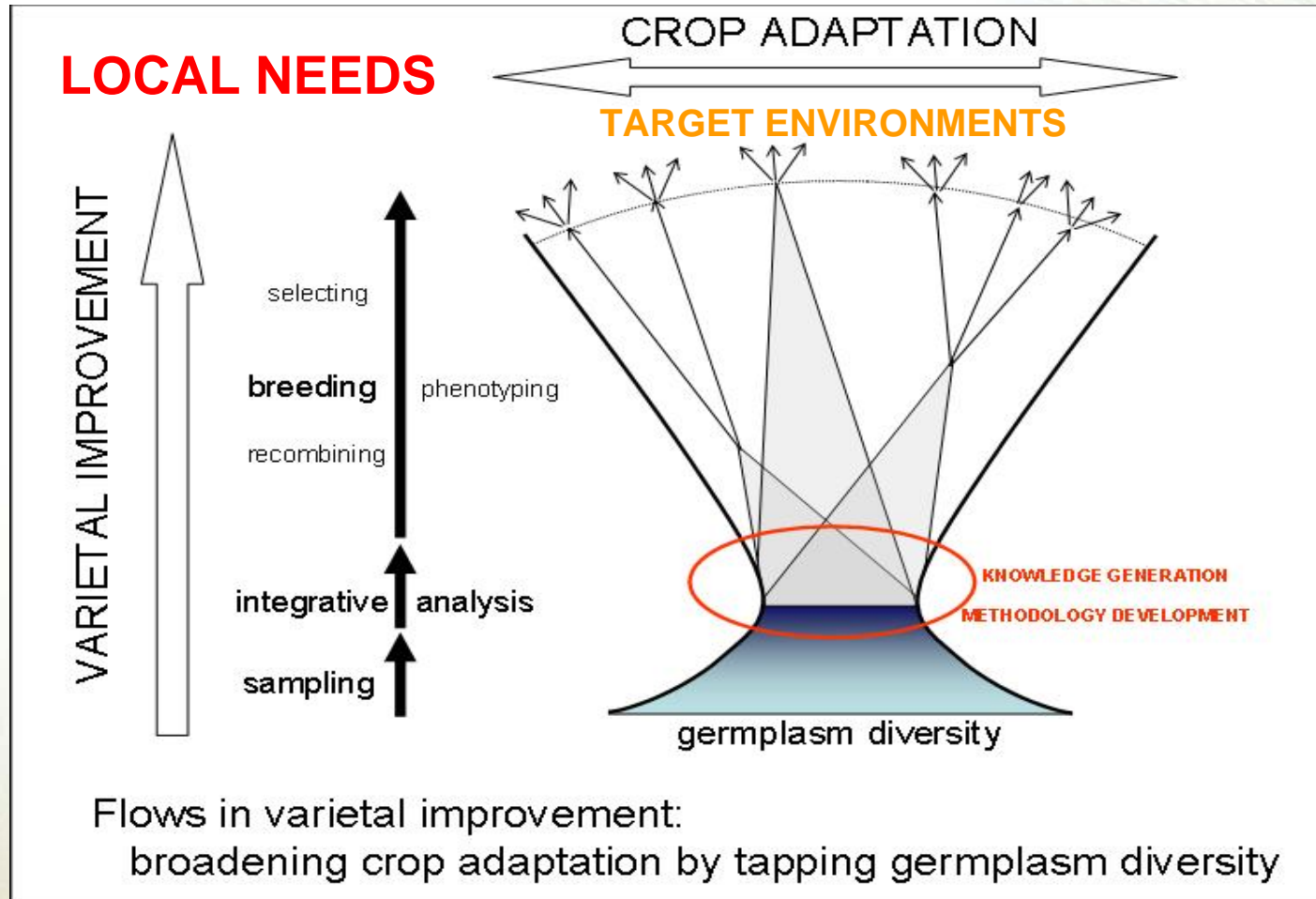
- ◆ Provide new tools for crop breeding
Test the efficiency of those tool and ensure they are 'usable'
- ◆ Impact crop improvement in marginal environments
Quantify the genetic gain in adapted germplasm in target marginal environments
- ◆ Generate value-added GCP products
Reference sets



Project Portfolio

- ◆ SPs remain the administrative structure of the project (home)
- ◆ Projects grouped per research themes (MTP)
- ◆ Value-added within and across SPs
 - ◆ Within (horizontal): LD studies
 - ◆ Across (vertical): Phosphorus gene in sorghum
- ◆ Clear support to the winners
- ◆ Few vertical projects per crops but when suitable a clear continuum of research across SPs
 - ◆ Research and validation projects are interconnected
- ◆ Validation step led by scientist working in target environments
- ◆ The flexibility of our funding mechanism will facilitate the adjustment of our research portfolio base

Global Scientific Approach



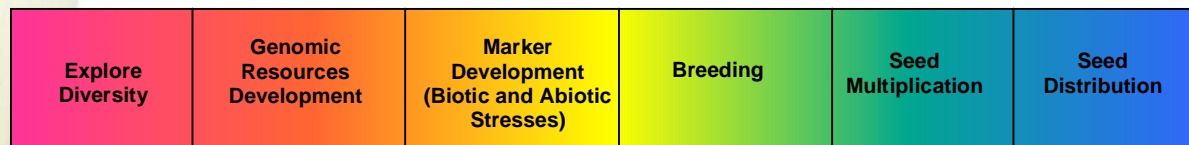
The B&M Gates Foundation Project

'Improving tropical legumes productivity for marginal environments in Sub-Saharan Africa'

10 Million US\$, 2007-2009, 1st April 2007

Objective: This project will develop the key genomic resources that are currently lacking in legumes (including cross-legume molecular markers for comparative genomics), identify molecular markers for traits of importance to resource-poor farmers (biotic stresses and drought tolerance), and improve breeding capacities in sub-Saharan Africa

Partners: ARIs, CG Centers, NARS

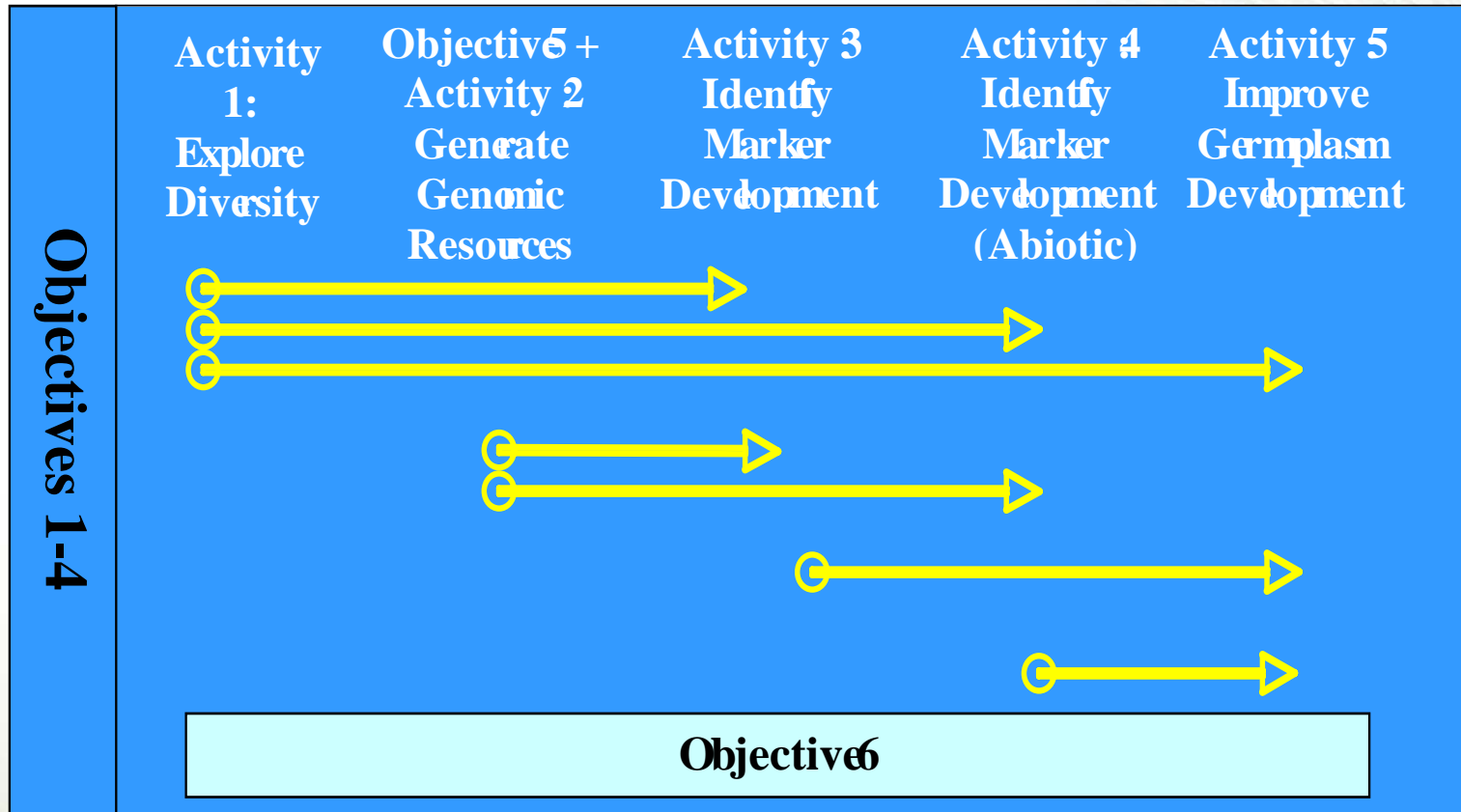


Germplasm Collection

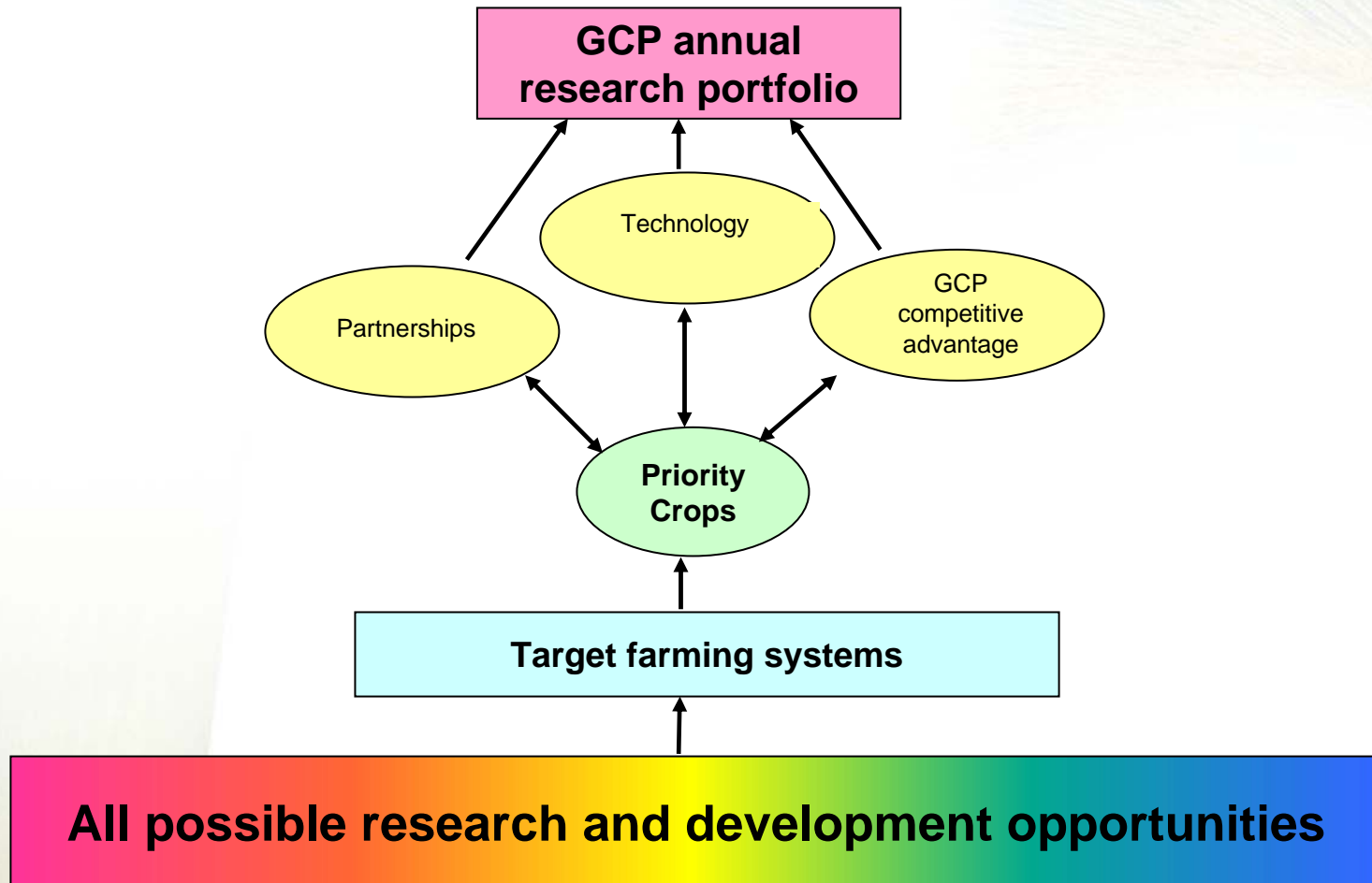
Farmer's Fields



The Organization of the Project



Resource Allocation Decision Pathway



Product Management and Delivery: Key Components for Impact

- ◆ Product management and product delivery link upstream research and the deployment of research-based products
- ◆ SP3 Leader coordinates and compiles outputs from the SPs, ensuring the flow of products, identifying products for value-adding in GCP's research projects, and validating these products.
- ◆ Once products are validated for routine use, SP5 Leader is responsible for their delivery by marketing and distributing them outside the Programme.
- ◆ Product management
 - ◆ Coordinate activities at the crop and/or region level
 - ◆ Product catalogues (Internal catalogue and GCP "Showcase")
- ◆ Product delivery
 - ◆ Delivery strategy: Clear definition of product and users
 - ◆ Delivery plans for every new GCP project
 - ◆ Support services (GSS, IP helpdesk)

GCP's IP rules

- ◆ **Vitally important: GCP research products from different activities promptly and easily available to other users**
- ◆ **Similar IP obligations for Consortium and others**
- ◆ **Researchers holding Challenge Programme IP must do what is necessary to make it available 'promptly' to Consortium members**
- ◆ **Contracts legally binding commitments by grantees that they will 'avoid jeopardising another Consortium Member's or Supporting Participant's rights to use any Challenge Programme IP'.**
- ◆ **Provisions of the Consortium Agreement do not preclude using MTA when necessary (e.g. transfer of germplasm or other genetic materials)**
- ◆ **Refusal to make available any GCP research results will constitute material breach of contractual obligations.**
- ◆ **Such breach would likely lead to institute being suspended from further GCP funding.**
- ◆ **In extreme cases, institute in breach of obligation to share could be asked, in legally binding arbitration, to repay part or all grant funds used to finance development of the research output as well as other costs incurred by GCP**
- ◆ **Every participant in the GCP should take very seriously the legal commitment made to share Challenge Programme IP "promptly" with Consortium members.**

The reporting process

- ◆ **Only one report per year**
- ◆ **One final report**
 - ◆ **Less text**
 - ◆ **Emphasis on Appendices**
 - ◆ **A: Activities, quantifiable outputs and key products**
 - ◆ **B: Timeline**
- ◆ **Link with GCP data flow system**
- ◆ **Informal report requested by SPL by mid-April**

GCP Monitoring and Future

◆ Reviews

- ◆ EC (May 2007)
- ◆ EPMR (September-December 2007)
 - ◆ Research
 - ◆ Management
 - ◆ Governance
- ◆ Community participation
- ◆ Conclusions for April Science Council

◆ Phase II (2009-2013)

- ◆ Output of the EPMR and other reviews
- ◆ Approval of the CP Phase II in 2008

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2007 Budget and Projection for 2008

- ◆ The non-payment of the 2006 EC contribution
 - ◆ Contingency plan
- ◆ 2007
 - ◆ Bill & Melinda Gates Foundation (US\$3.3M, May 2007)
 - ◆ DFID (US\$4.5M, September 2007)
 - ◆ EC (US\$12.0M, November 2007)
- ◆ 2008
 - ◆ Bill & Melinda Gates Foundation (US\$3.3M, May 2008)
 - ◆ DFID (US\$4.5M, March 2007)
 - ◆ EC (US\$M, January 2008)
- ◆ 2008 Commissioned projects (about US\$6M)
 - ◆ Two sets of commissioned work
- ◆ 2008 Competitive
 - ◆ Second wave (US\$2M)
 - ◆ Open a third call (about US\$4M)

We are back on track!

The 2007 ARM: Purpose and Objectives

- ◆ Programme to be adjusted on a yearly basis
 - ◆ The first set of competitive projects will end by mid 2008
 - ◆ A large set of projects will be initiated in 2008
- ◆ We need to be demand driven
 - ◆ Importance of stakeholders and partners to deliver GCP products
- ◆ Parallel and Plenary sessions
 - ◆ SP sessions
 - ◆ 15 minutes: Go to the point!
- ◆ Brainstorming
 - ◆ We need to anticipate what can of material to develop
 - ◆ Research bottlenecks in the current research portfolio
- ◆ Poster sessions (we will have fun!)
 - ◆ Presentation of new projects
 - ◆ Specific topics of ongoing projects
- ◆ Questionnaire:
 - ◆ <http://www.surveymonkey.com/GCP>

Conclusions

Research Strategy

- ◆ Better focus and more cohesion across the GCP research portfolio

Project Management

- ◆ High quality of an output oriented research

Partnership

- ◆ Diversification and more leadership from the South

The feeling of the GCP community

- ◆ Enthusiasm and commitment of the Generation community

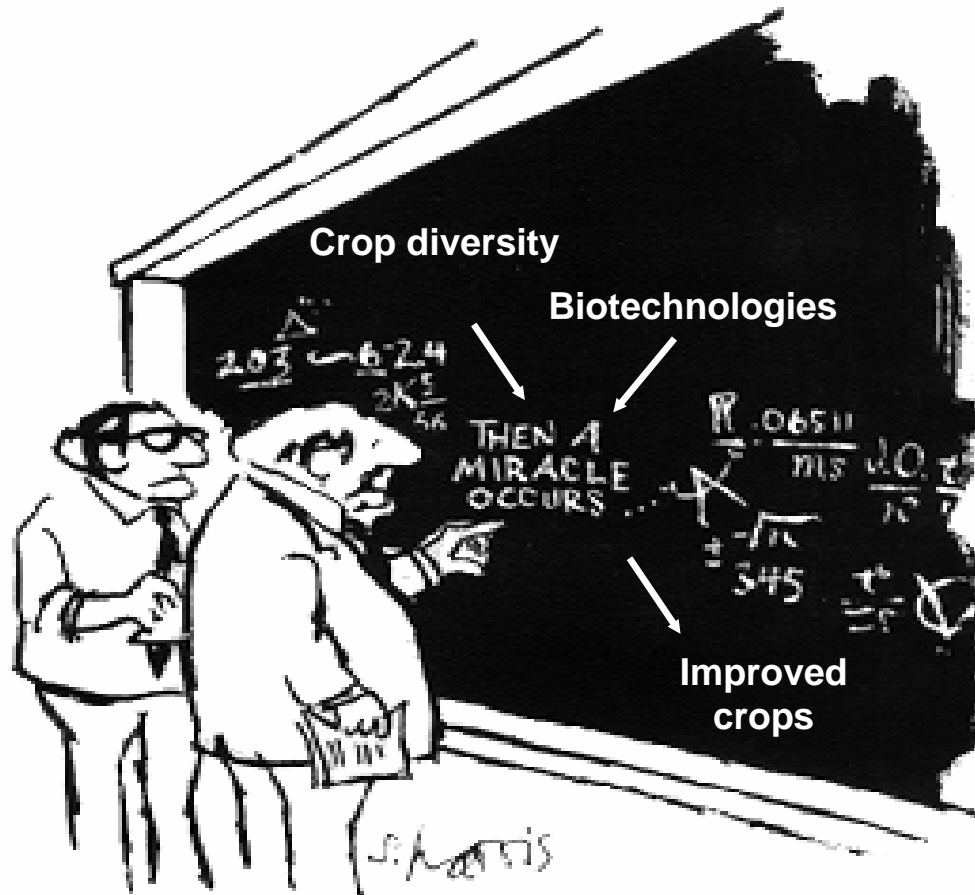
Financial Situation

- ◆ Bright future (at least for 2008...)

To think about....

- ◆ Data quality and release

Looking forwards to a fruitful ARM!



"I think you should be more explicit here in step two."