

From QMS ideal to performance reality - a hybrid performance management approach for genebanks



Mellissa Wood and Jenin Assaf
Director of Operations
Global Crop Diversity Trust
www.croptrust.org



Overview

- Introduction to Trust
- Quality Management Systems
- The Ideal
- The Reality
- Trust and CGIAR approach
- Performance indicators
- Summary

- 
- ITPGRFA
 - Crop and regional strategies
 - Improved information systems
 - Improved transport systems
 - Svalbard Global Seed Vault
 - Threats to global food security

Global Crop Diversity Trust

*To ensure the long-term **conservation** and **availability** of plant genetic resources with a view to achieving global food security and sustainable agriculture*

More specifically:

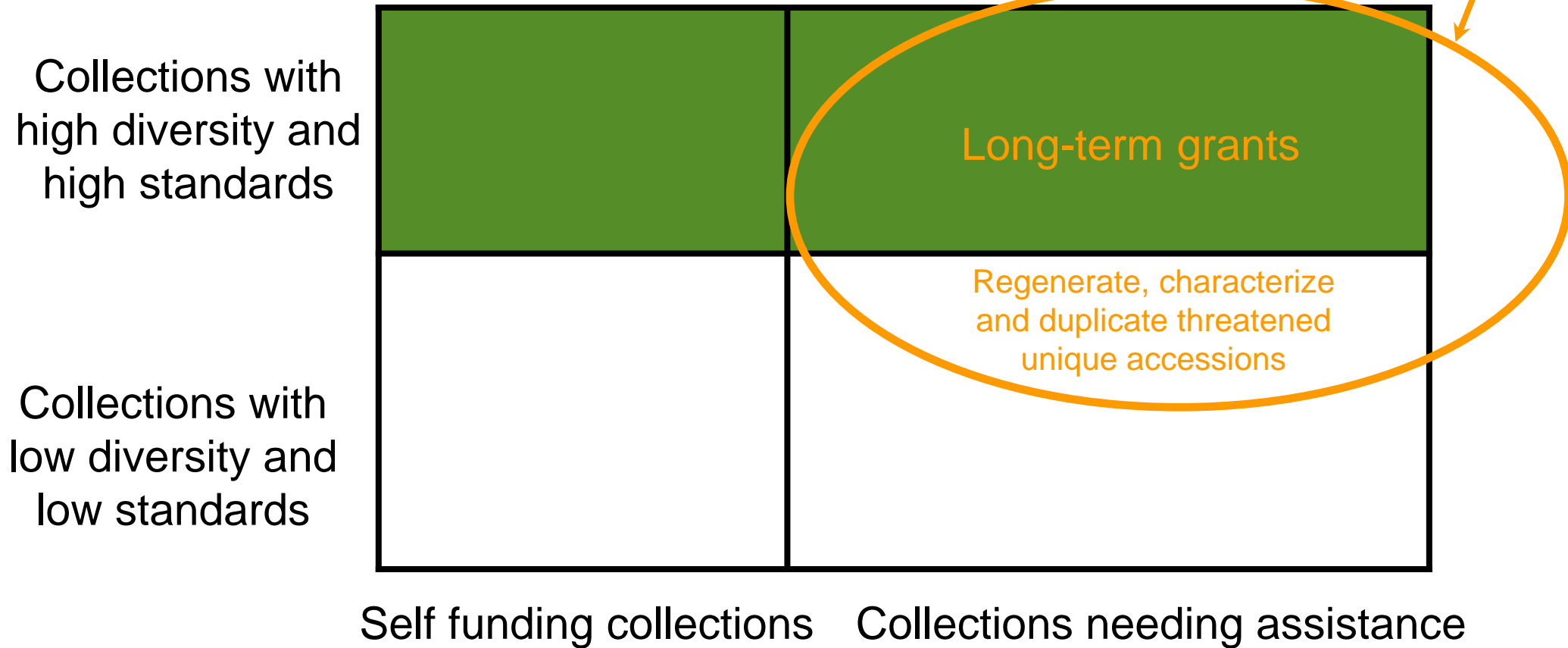
- **Safeguard** ex-situ collections of crop diversity of global importance
- **Rescue** threatened valuable diversity
- Promote the **access** and use of diversity
- Actively **implement** Treaty Articles (5, 6, 7, 8, 12, 13, 14, 15, 16, 17)

 An essential element of the Treaty Funding Strategy

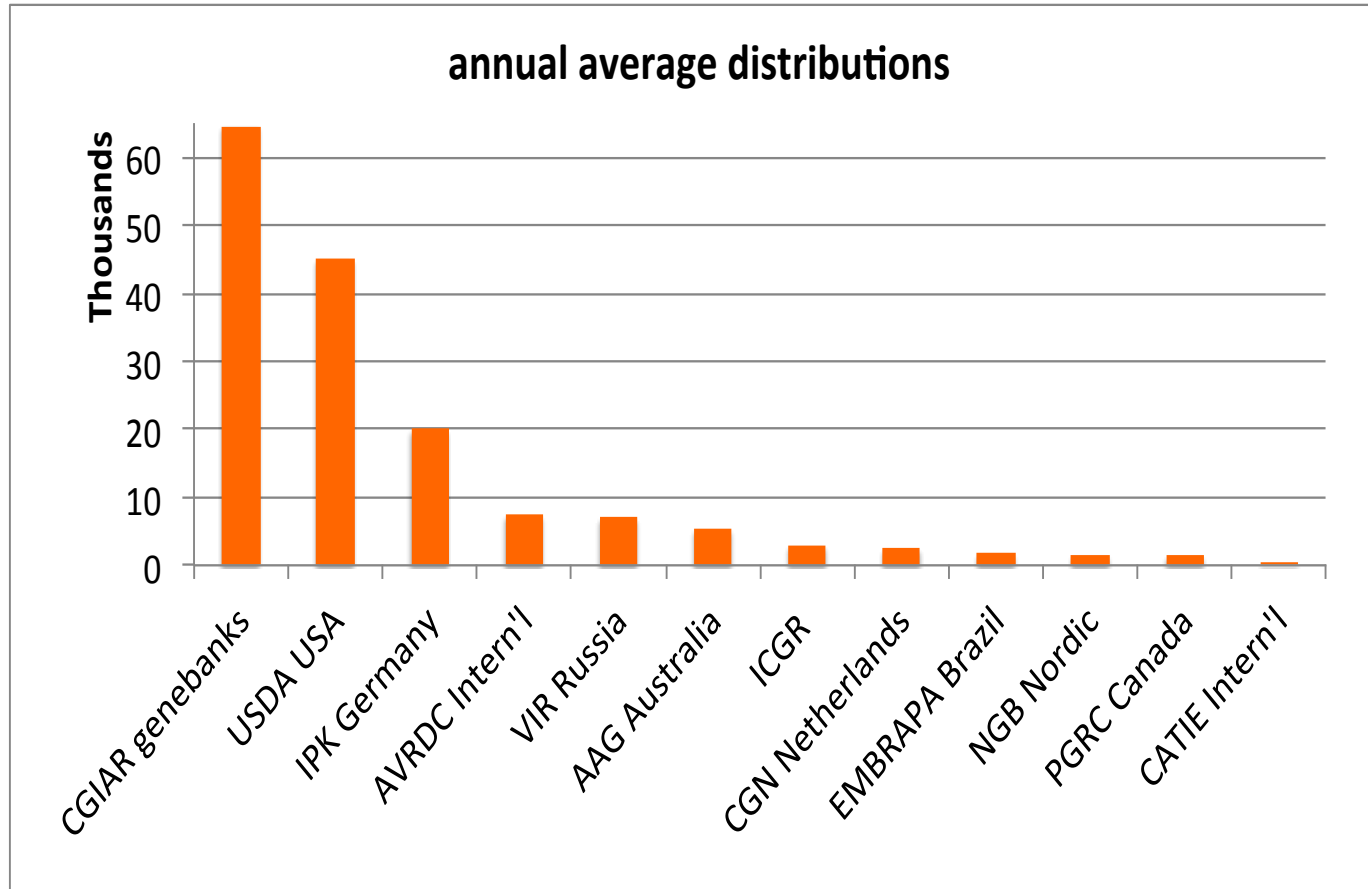


Building a rational global system

Trust funded portion
of global system

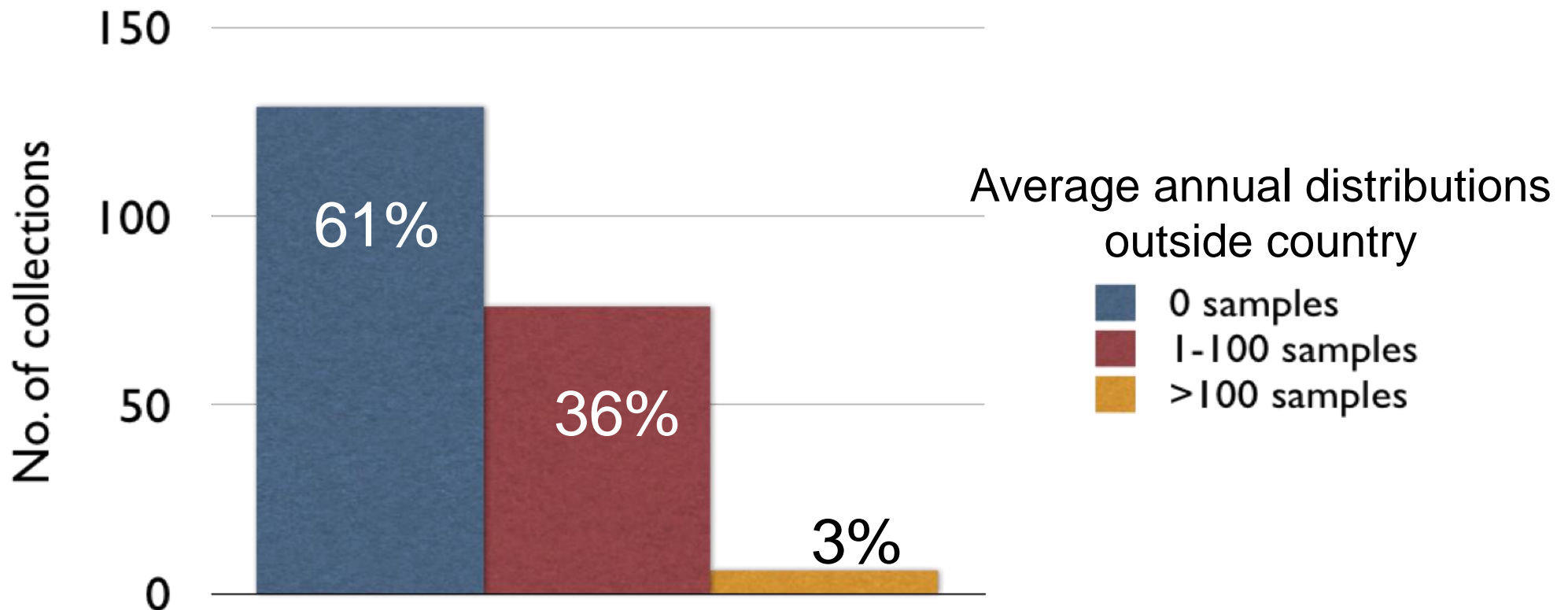


Genebank samples distributed internationally per year



Source: Collections online databases, publications, and personal communications between Trust and Genebank Managers, 2008-2010

Distributions of germplasm samples from 211 national collections

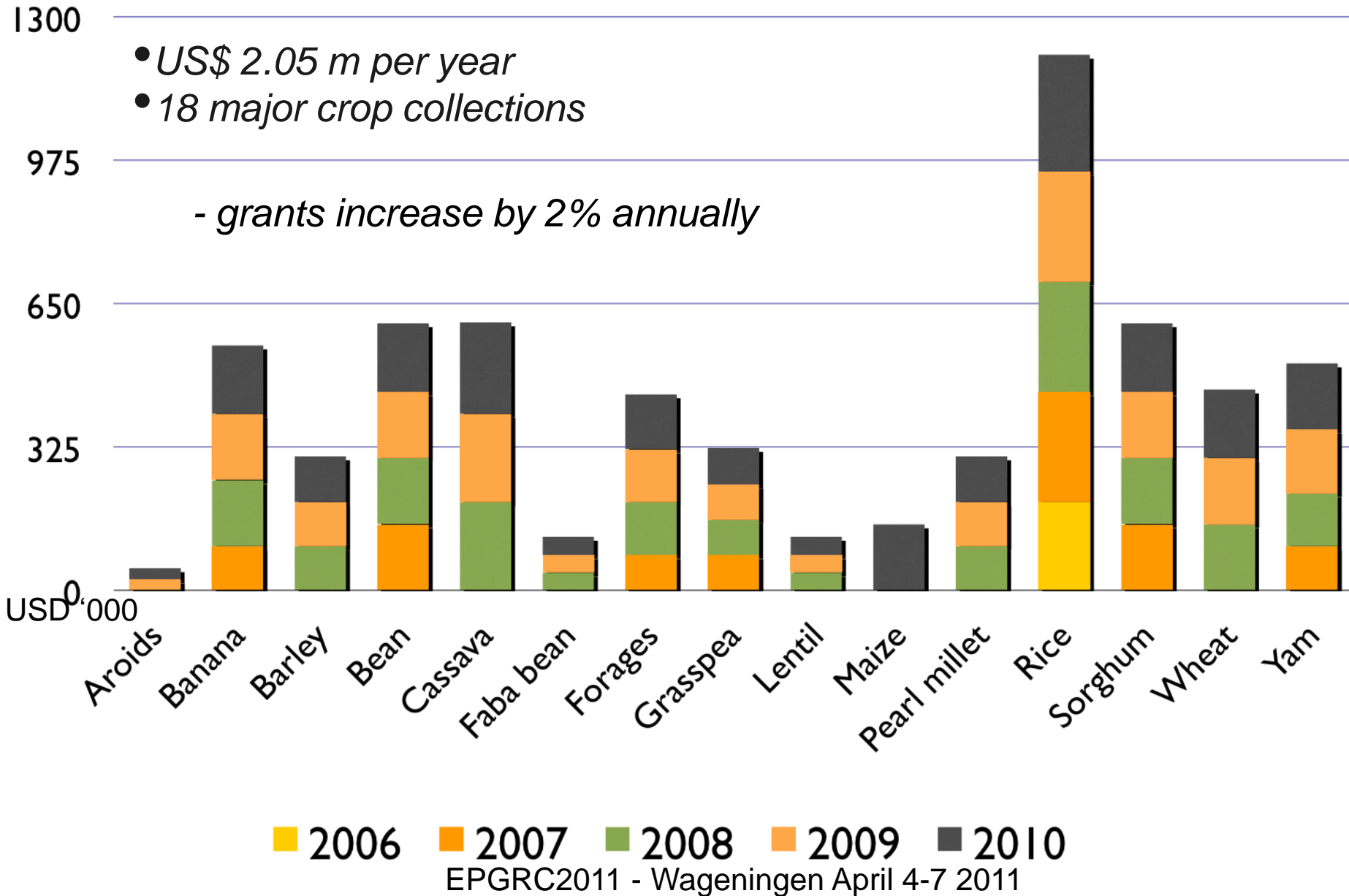


Source: Personal communications between Trust and collection holders, 2008-09; data on average annual distributions between 2005-2007 from 211 crop collections in 77 institutes in 69 countries.

Long-term grants



Long-term grants - annual funding forever



IRRI



CIMMYT



SPC



SGSV



ICRISAT

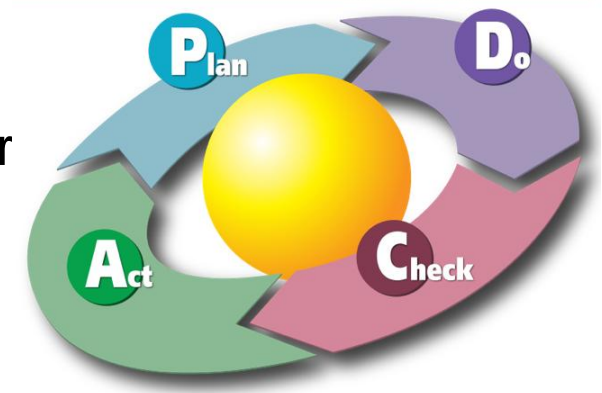


Quality?



Quality = capability to meet expectations

- Ancient & Medieval worlds
 - Codes - law and life
 - Standard measures and yardsticks
 - Guilds, master & apprentices
- Industrial revolution
 - Mass production, streamlining and optimizing using technology
 - ⇒ Standards and procedures
- Current
 - Including human capacity & taking a systems appr
 - ⇒ Flexibility
 - ⇒ **Quality** (technology + human capacity)





What is a Quality Management System?

“A set of policies, processes and procedures that ensure a common sense approach to the management of an organization; the system should ensure consistency and improvement of working practices, which in turn should provide products and services that meet customer's requirements”

- Number of elements
- Norm in many businesses (drug companies, food control, environmental)
- Formal (certified or accredited) or informal

Why do genebanks need quality management systems?

Outputs

- Stop things from going wrong
- Functioning equipment, quality supplies & processes
- Reduce costly mistakes and manage budget constraints
- Assure quality of the service or research provided
- Performance audits meeting requirements of users or funding agencies
- Harmonized, optimized and recorded procedures across individuals and departments
- Capturing experience and knowledge of past employees
- Mechanisms for feedback and improvement

Outcomes

- Effective risk management
- Cost efficiencies
- Improved performance
- Improved trust
- Improved collaboration
- Meeting client demands
- Trained and competent staff
- Transparency and greater knowledge sharing, Perpetuate knowledge

International QMS standards

ISO 9001:2008 series – implementation of a quality system of processes **CERTIFICATION**

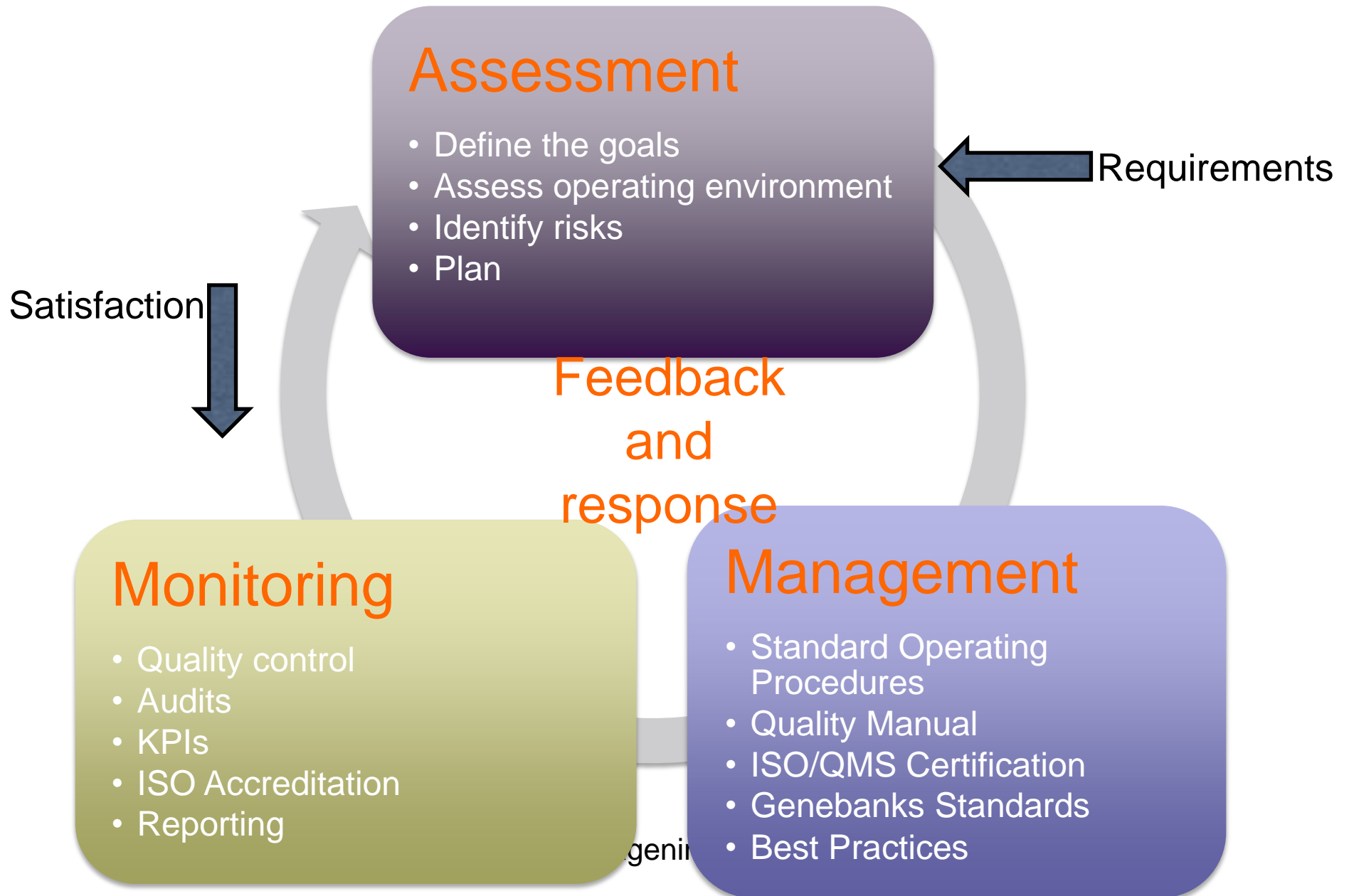
- Generic standard – can be applied to business enterprise, public administration, government department, research institute
- ISO 9001 certification certifies consistent processes are used BUT does not guarantee compliance (or quality)
- Implemented by over a million organizations in 176 countries
- Certified - IPK Germany, CGN Netherlands and other national genebanks

ISO 17025:2005 – testing and calibration **ACCREDITATION**

- Applicable to all laboratories, regardless of activities
- Applicable to administrative and technical operations
- Tested by 3rd party audit. Formal recognition of competence
- Accreditation – CIP (genebank and lab), CIMMYT (la
EPGRC2011 - Wageningen April 4-7 2011



Ideal – Quality Management Approach



Reality

- Lack of uniformity in genebank operating environments
 - geographic location, security, political stability,
 - funding, capacity and skills
- Variance in the biology and quality level of crop management
- Difficulty in defining and adhering to certified procedures for some activities in uncontrolled environments
- Internally imposed system requirements on many genebanks that reside within larger institutions
- No existing, systematised approach to date



QMS options for CGIAR genebanks

2008 Viability study

1. Documentation of processes – full or partial documentation of processes and procedures
2. Certification - ISO 9001
3. Accreditation – ISO 17025
4. Hybrid – combination of QMS (for critical, high risk, or achievable operations) plus documentation of procedures

The adequate and effective functioning of any genebank can only be guaranteed on a long-term basis if an adequate QMS is in place

Why is the Trust interested in genebank quality?

- No traditional milestones or outputs
 - “Business as usual”
- ⇒ Needed to measure annual progress for Trust and donors
- ⇒ Needed to facilitate an approach for genebanks to monitor, report and improve their overall performance and effectiveness
1. *Conservation of crop germplasm and recording of associated information*
 2. *Distribution of crop germplasm and associated information*
 3. *Contributing to the development of a global system and promoting global collaboration*



- 439,943 accessions
 - Seed 409,813 accessions
 - Vegetative (mix of cryopreservation, in vitro and field) – 14,963 accessions
- Across 18 crop collections
- Held by 7 CGIAR genebanks + 1 regional genebank





Performance Indicators: development

- Focus on quantitative indicators – with targets
- Balancing the need to keep it simple while clarifying EXACTLY what is required
- Agreed/understood terminology
- Testing with users
- Harmonise with other activities and/or normal genebank operations
- Balancing the need to keep them stable against improvement
- Avoiding “perverse” indicators
- Used since 2007. Began with a baseline.
- Applicable both in CGIAR genebanks and non-CG genebanks (2009)
- Built into reporting systems of genebanks



Performance Indicators

Category A - Conserving and making available
the collection (19 PIs)

“critical core operations”



Category B - Promoting global collaboration in
crop conservation (11 PIs)

“leadership and collaboration”



www.croptrust.org - our work



Category A.

Conserving and making available the collection

- Sound management and planning (5)
- Long term storage and management of collection to agreed scientific and technical best practices (5)
- Safety duplication of collection (2)
- Characterisation of collection (3)
- Documentation of collection and provision of data in publicly available information systems and Gensys (1)
- Distribution of germplasm in accordance with the ITPGRFA (5)

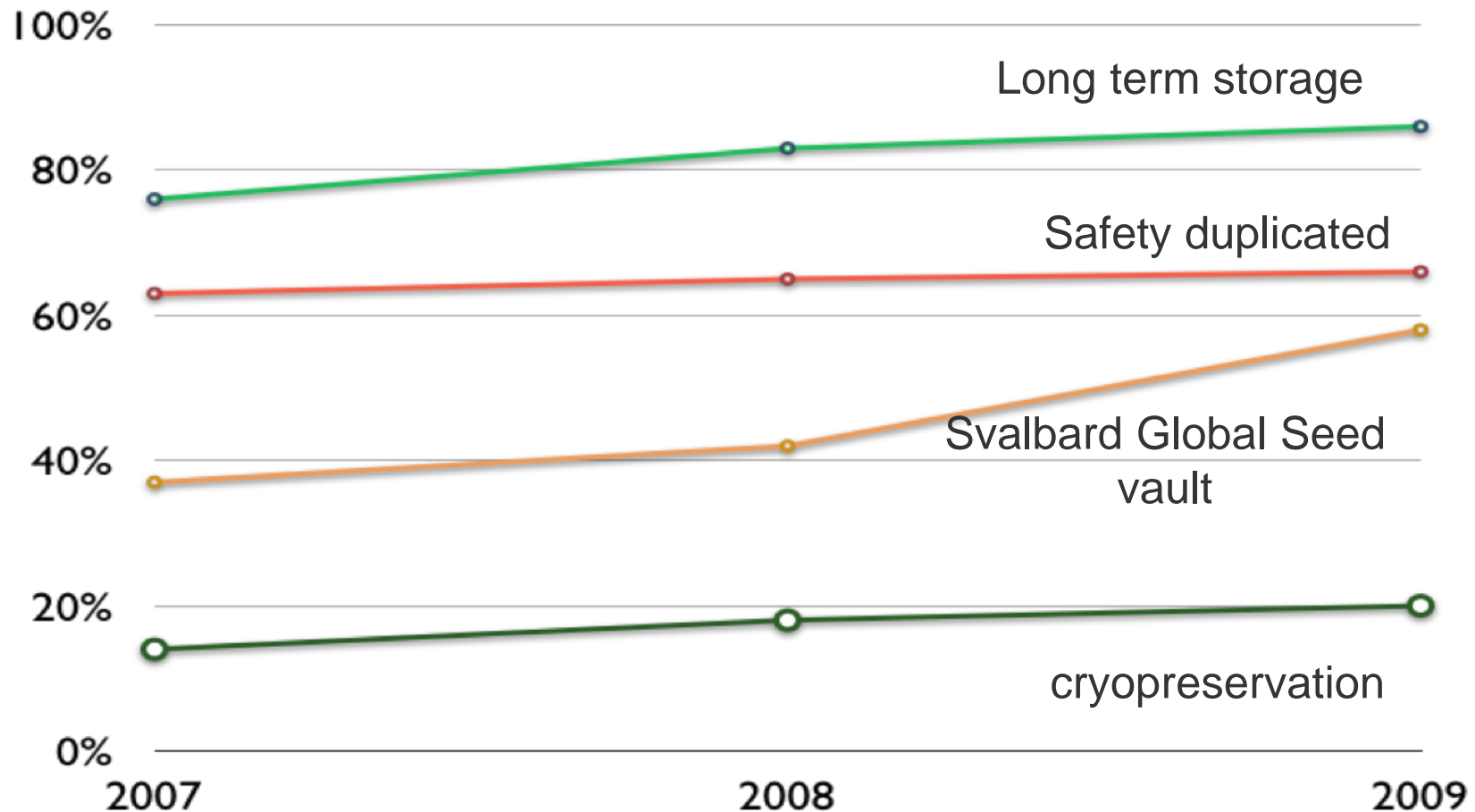
Performance indicators: sound management and planning (x5)

- Interim approach
- Move towards redundancy of management PIs



Results: are genebanks performing?

Ensuring long term conservation

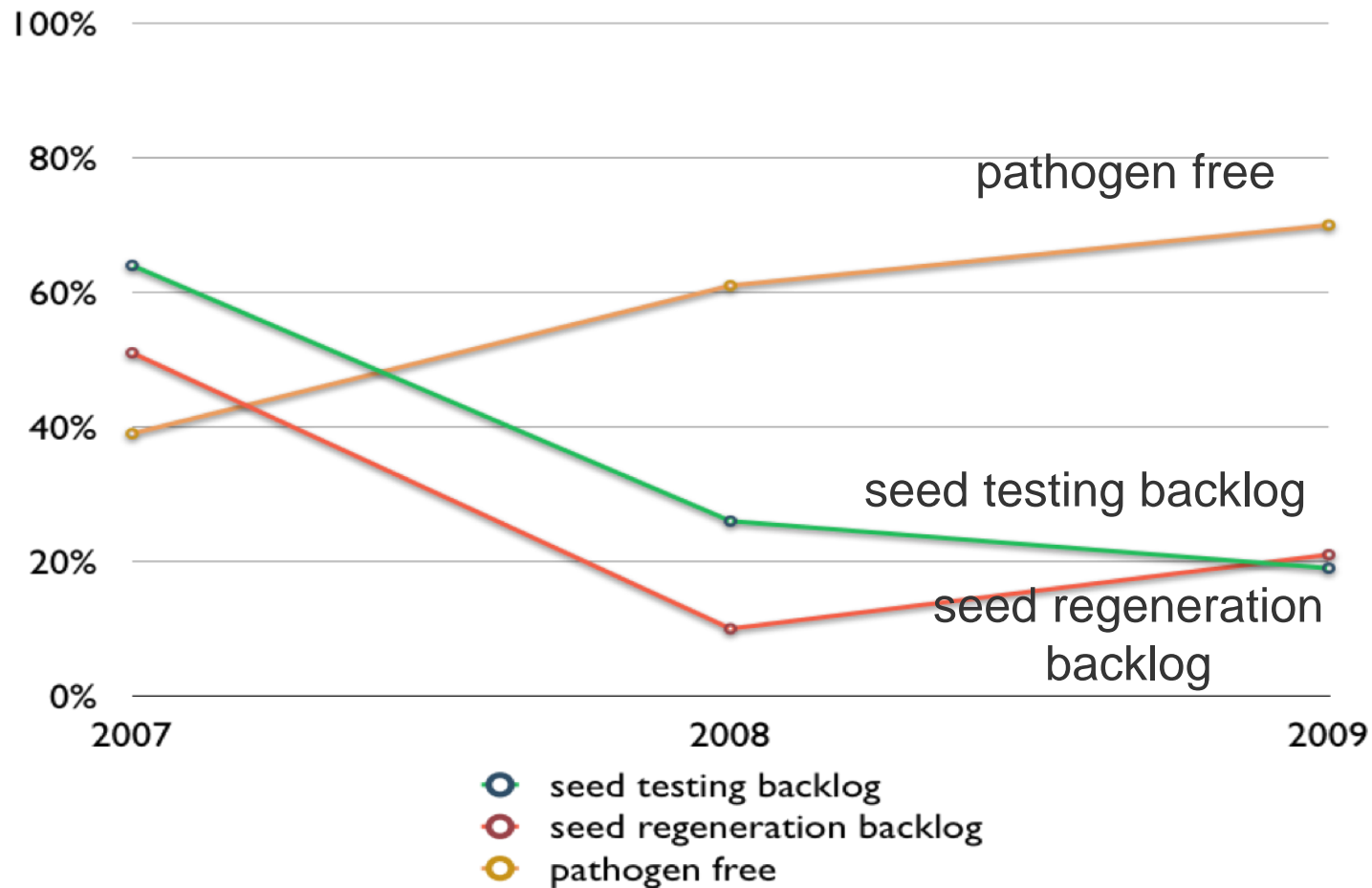


- % seed accessn's under LT
- % seeds safety duplicated off site
- % seeds in SGSV
- % stored in cryopreservation

Results: are genebanks performing?

Ensuring germplasm availability

% of accessions requiring work to ensure availability or are pathogen free
(averaged across all Centers)





Summary

- Quality management approach (QMA) results in greater transparency, cost efficiencies, improved quality standards, greater knowledge sharing and trust among genebanks.
- Genebanks should aim towards adopting a QMA
- Options exist, including a ‘hybrid’ approach towards QMA
 - formal QMS plus internal documentation
- Too many challenges for Trust funded genebanks to adopt a consistent QMA
- Trust adopted a performance indicator approach (meet immediate needs) but built into this, indicators and a platform to actively encourage adoption of QMA
- Trust aims to work with genebanks **collectively** to move towards a consistent QMA
- Adoption of quality management approach is essential for collaboration between genebanks.
 - creates transparency and builds trust
 - **Key element for building a global system for PGRFA**

Thank you for your attention



EPGRC2011 - Wageningen April 4-7 2011