Network for Enabling Tools, Technologies, and Services

IDT Leads:

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The WHY of N4ETTS

The problem statement:

Economic growth in the agricultural sector is more than twice as effective at reducing poverty than growth in other sectors. Agriculture is already impacted by climate change, faster than we expected. We need climate resilient seeds quickly as part of an adaptation strategy for climate change.

Our technical challenge:

We need to breed new seeds **fast** for climate resilience. This requires modern breeding techniques and operations scaled across the CGIAR-NARES networks

A part of the solution:

N4ETTS institutionalizes services for breeding operations in OneCGIAR to support breeding modernization efforts in the CGIAR and NARES

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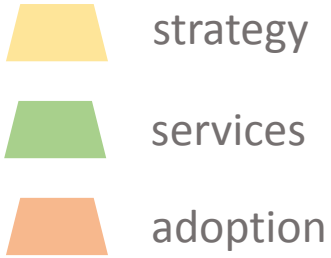
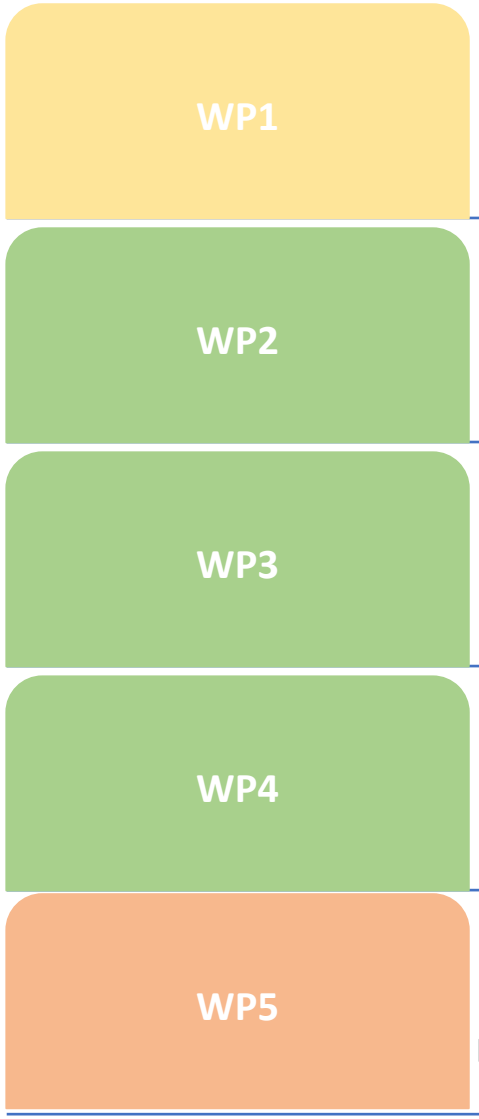




Strategic Modernization: simulation and forecasting to guide informed decisions on ONECGIAR modernization investments

Cost Effective Shared Services: reduce costs for, increase effectiveness of, and make routine the use of tools, technologies, and services

Performance Management of Consistent, Connected Operations: motivate and guide the continuous improvement of breeding program operations

Smarter Use of More Data: share data for larger, more powerful datasets that can be readily analyzed and interpreted for decision making

Innovation Development and Research Exchange (IDare): increase global adoption of breeding tools, technologies and services across the CGIAR-NARS breeding network

WP1

Work Package title	STRATEGIC MODERNISATION
Work Package main focus and prioritization	To guide informed decisions in CGIAR-NARS modernization investments • Breeding simulations for optimized breeding pipeline design according to quantitative genetic principles • Budget forecasting for management of the breeding product portfolio and improving operational cost effectiveness • Modelling of TTSS adoption and benefits across the CGIAR-NARS breeding network
EIB connection	Module 2

WP2

Work Package title	COST-EFFECTIVE SHARED SERVICES
Work Package main focus and prioritization	Reduce the cost of Tools Technologies, and Shared Services (TTSS) making modernized breeding more accessible with shared services across the global CGIAR-NARS network. Combined purchasing power enabling the generation of quality and consistent data across the breeding network. Analytics expertise across the CGIAR coordinated to maximize their accessibility and impact to breeding programs. Shared serviced established for: • Genotyping • Sequencing • High throughput phenotyping (HTP) • Quality and biochemical testing (nutritional traits, soil analyses) • Biometrics • Bioinformatics
EIB connection	Module 3 Module 5

WP3

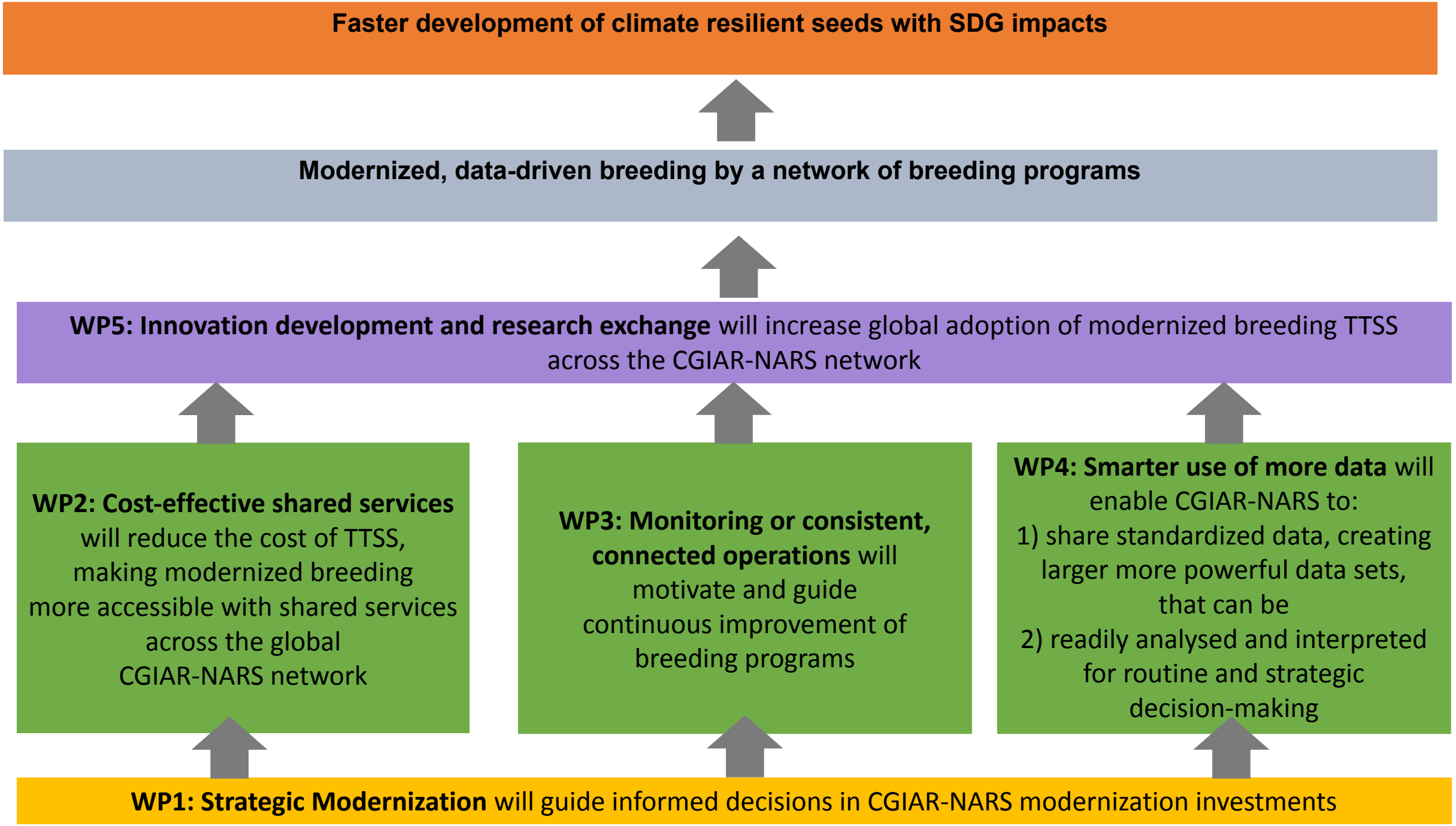
Work Package title	PERFORMANCE MANAGEMENT OF CONSISTENT, CONNECTED OPERATIONS
Work Package main focus and prioritization	To motivate and guide continuous improvement of breeding programs. Dedicated Process Management team to support Breeding Programs in describing, harmonizing, and adopting standard operating protocols, workflow charts, and quality controls across the breeding networks. These activities will result in • Standardized protocols shared in a common system • Harmonized operations enabling consistent data generation • Adoption of quality management systems within facilities Performance Management System (PMS) established to track key indicators and outcomes for operational and breeding performance
EIB connection	Module 4

WP4

Work Package title	SMARTER USE OF MORE DATA
Work Package main focus and prioritization	To enable CGIAR-NARS to 1. share standardized data, creating larger more powerful data sets that can be 2. readily analyzed and interpreted for routine and strategic decision-making. • Data Management System (DMS) that enables collection, curation, and analysis of data; facilitates meta-analysis of the data generation process, and structure documentation for institutional memory • On the ground user support network for data management and DMS adoption
EIB connection	Module 5 Module 7

WP5

Work Package title	INNOVATION DEVELOPMENT AND RESEARCH EXCHANGE (Idare)
Work Package main focus and prioritization	To increase global adoption of modernized breeding TTSS across the CGIAR-NARS network • Change management plans • Regionalized capacity building • Project management support for integration of regional capacity building investments into local operations
EIB connection	Module 4 Module 6 Module 7


Faster development of climate resilient seeds with SDG impacts
Modernized, data-driven breeding by a network of breeding programs
WP5: Innovation development and research exchange will increase global adoption of modernized breeding TTSS across the CGIAR-NARS network
WP2: Cost-effective shared services will reduce the cost of TTSS, making modernized breeding more accessible with shared services across the global CGIAR-NARS network
WP3: Monitoring or consistent, connected operations will motivate and guide continuous improvement of breeding programs
WP4: Smarter use of more data will enable CGIAR-NARS to:
1) share standardized data, creating larger more powerful data sets, that can be
2) readily analysed and interpreted for routine and strategic decision-making
WP1: Strategic Modernization will guide informed decisions in CGIAR-NARS modernization investments

Your questions?

Appendix

Breeding Services: Outputs

1. Overcoming the logistical barriers of breeding modernization
2. Order(s) of magnitude increase in data generated for product advancement
3. Crop agnostic, global breeding data science team
4. Global process management team providing change management support
5. Global Breeding IT and user support team implementing a unified strategy for public breeding data management systems
6. CG and NARES modernization plans benefiting from dedicated project management