

Briefing to the Biomass R&D Board Technical Advisory Committee

USDA Sustainability Assessment Prototype

Discussion of purpose, resources, and structure



Washington, DC
Dec. 15, 2010

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Agenda

- ▶ Background & overview
- ▶ Analytical approach
- ▶ Conceptual outputs and applications
- ▶ Discussion

The object of this task is to recommend an approach to assessing the sustainability impact of USDA energy RD&D investments

Recent High Level Directives

May 05, 2009

Presidential
Biofuel Directive



February 03, 2010

Growing
America's Fuel
Report



June 23, 2010

USDA Regional
Roadmap to
Meeting RFS
biofuels Targets



Sustainability is a common theme

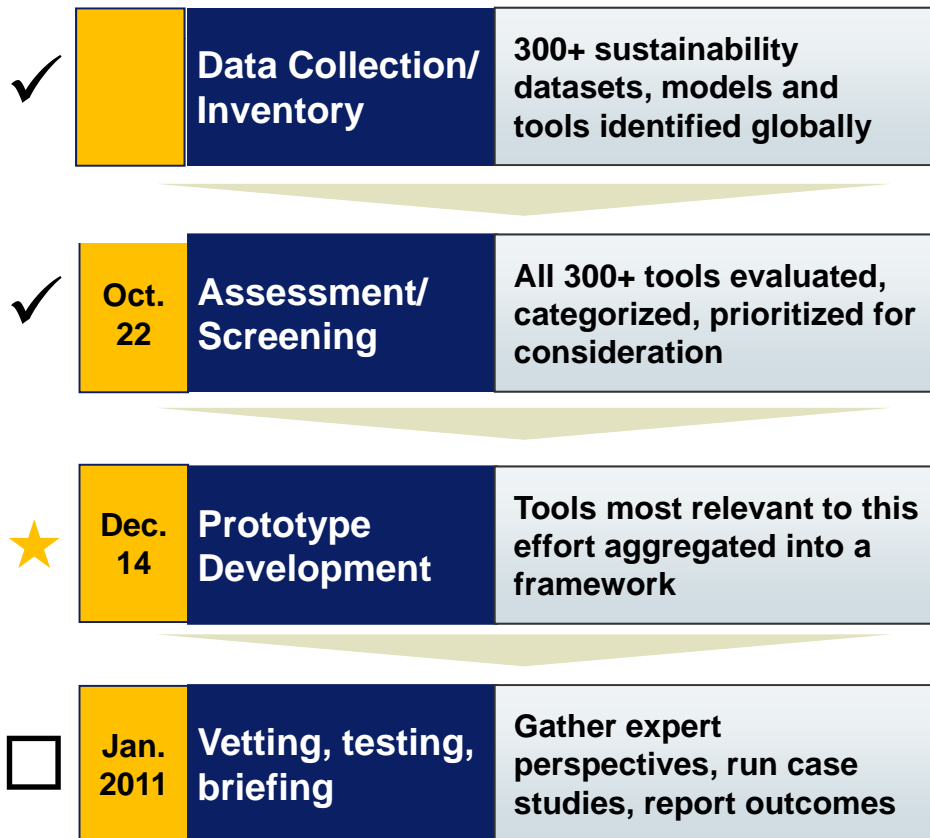
What we've been asked to do

- ▶ “Sustainability” is a new frontier – and one that has eluded clear definition, quantification
- ▶ Many sustainability models exist in the public domain; few, if any, comprehensively address the theme
- ▶ USDA has asked us to help identify and evaluate the use of sustainability-related:
 - Data sources
 - Models
 - Reports
 - Evaluation tools
- ▶ It also asked us to recommend a prototype for applying the most relevant resources

Since September, we have evaluated hundreds of potential resources, and have nearly completed a draft prototype framework

The scope of work entails four primary phases...

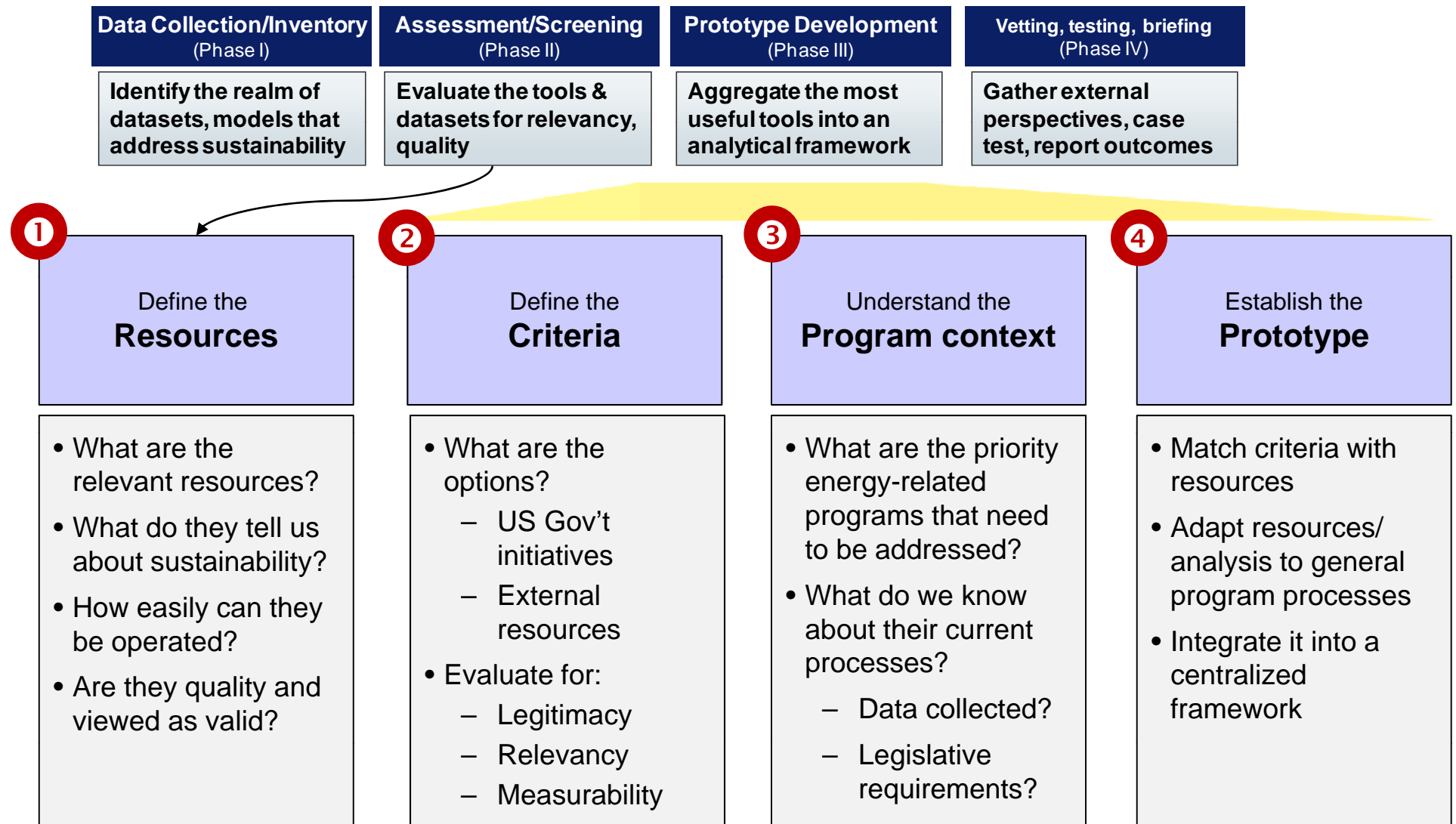
...With several likely applications



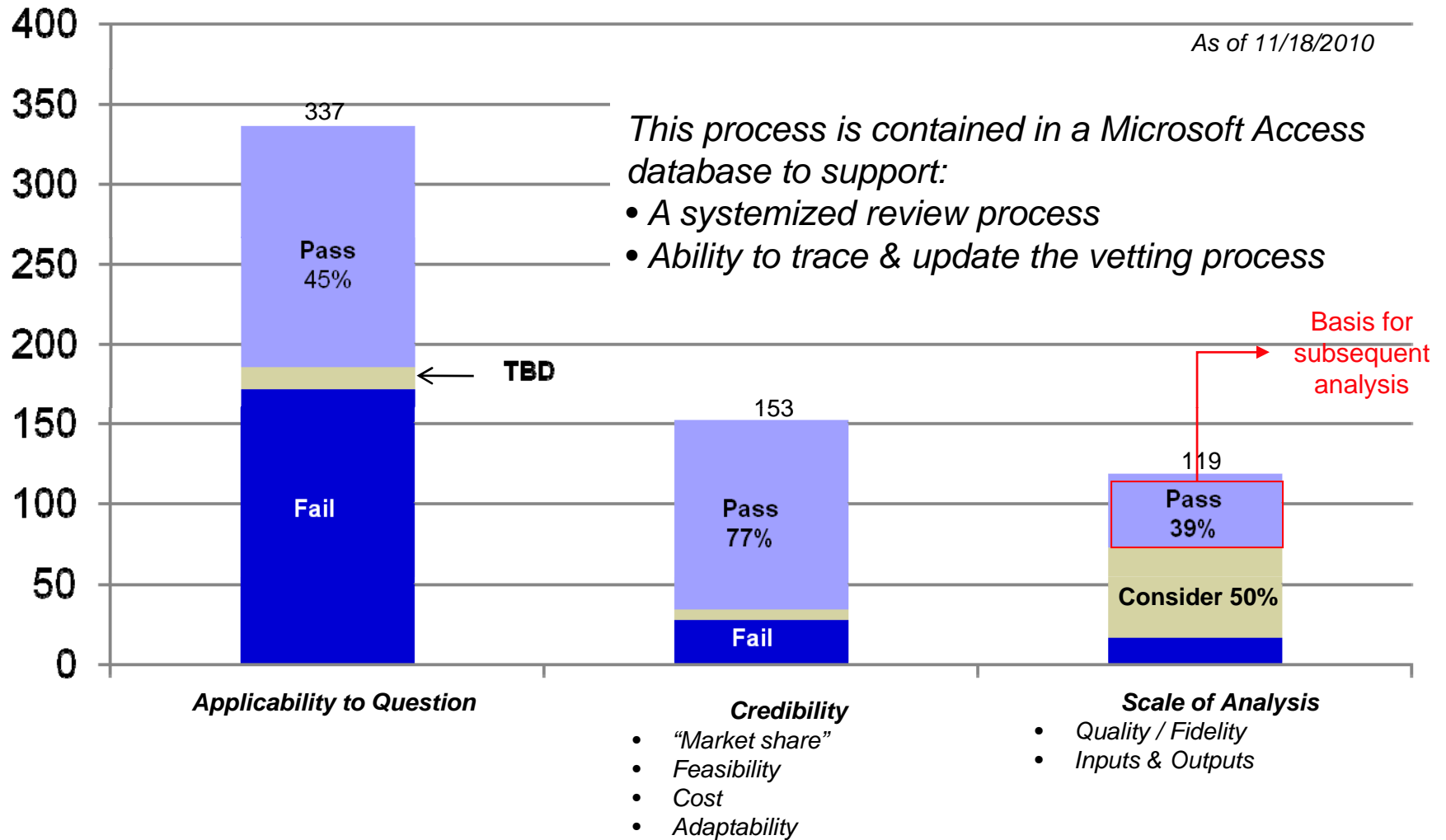
Objectives
<p><u>Primary Objective</u></p> <ul style="list-style-type: none"> ▶ Provide a consistent, workable framework for assessing USDA programs <p><u>Secondary Objective</u></p> <ul style="list-style-type: none"> ▶ Support development of USDA strategic planning exercises ▶ Support reporting to external stakeholders on contributions toward Department objectives ▶ Advance application of these complex concepts on an interagency basis

Our intent is to leverage work already done – not duplicate other efforts

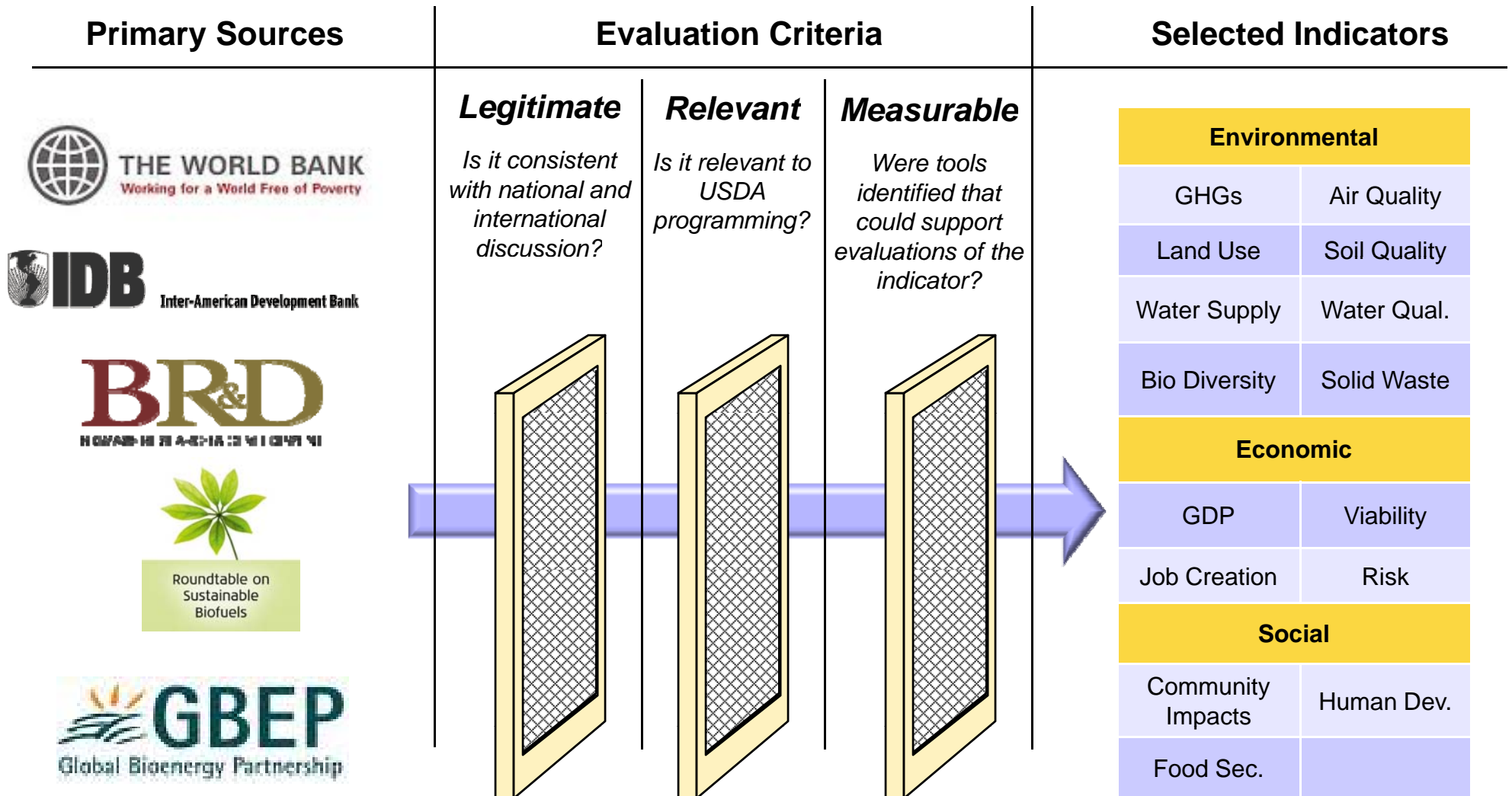
The development of the prototype itself has been broken down into four analytical components



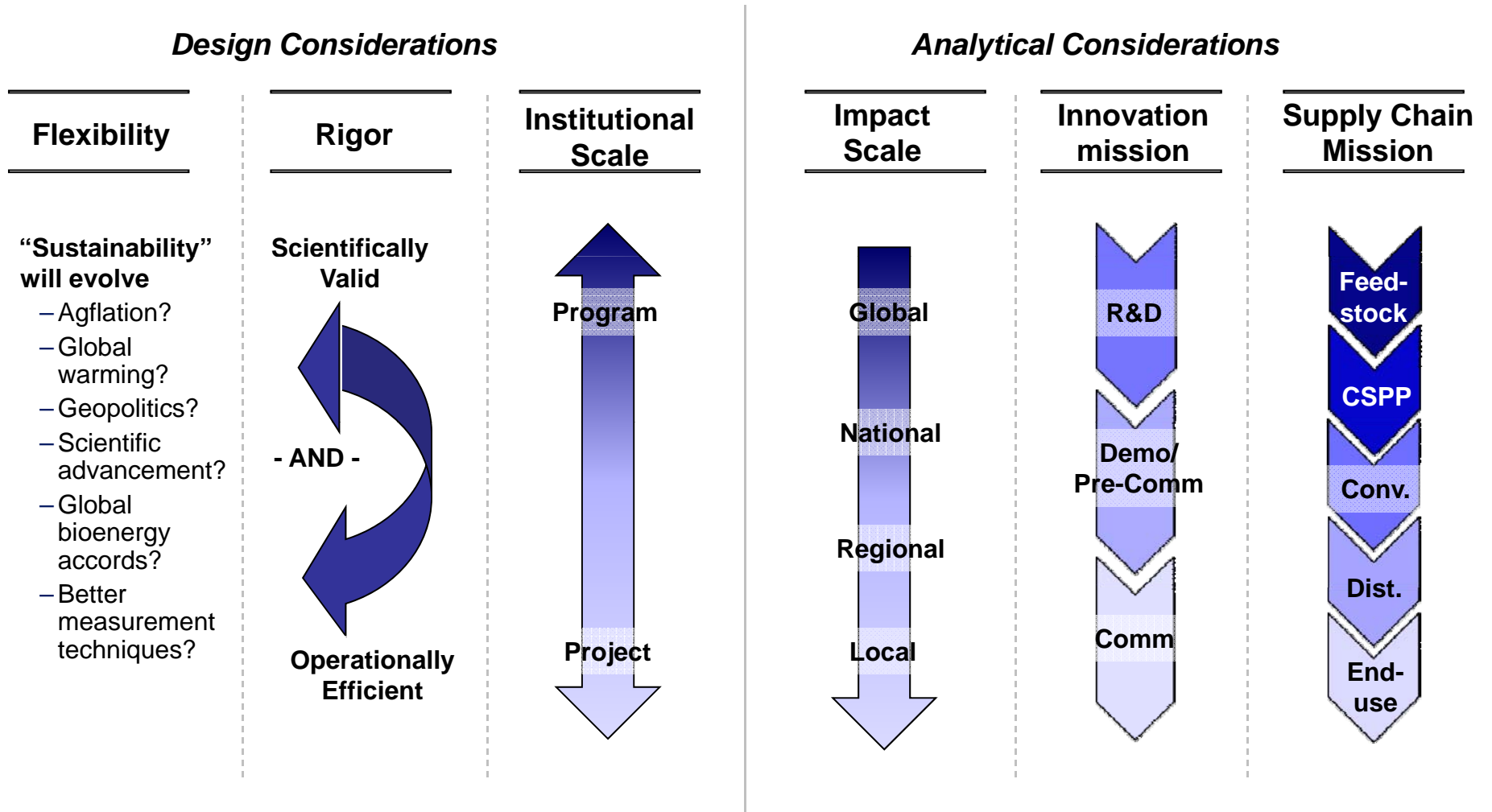
In the first phase we identified over 337 resources, and reduced the high-potential candidates down to less than 50



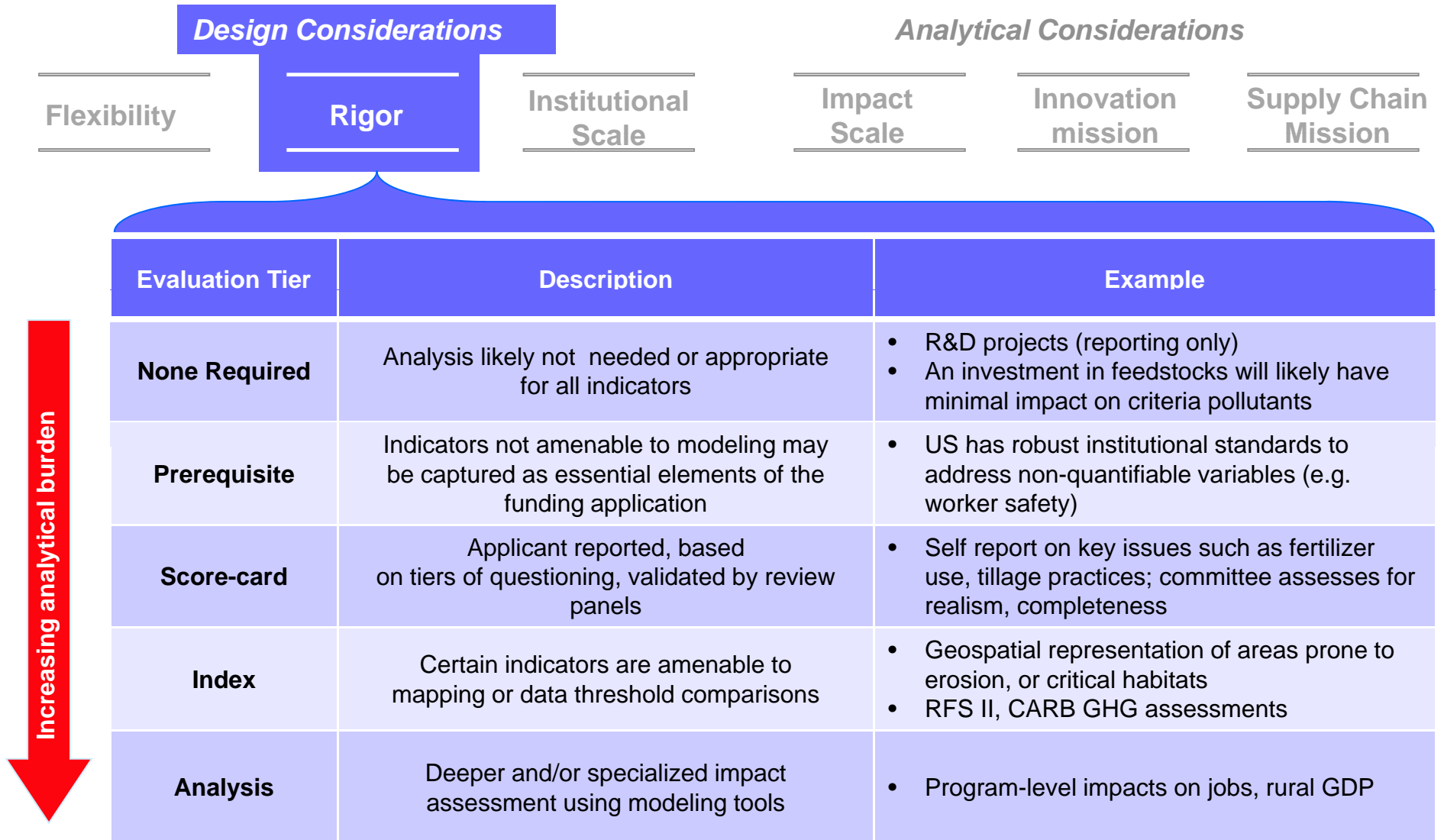
We then determined which indicators could be operationalized – 3 criteria served to define which should be included in the prototype



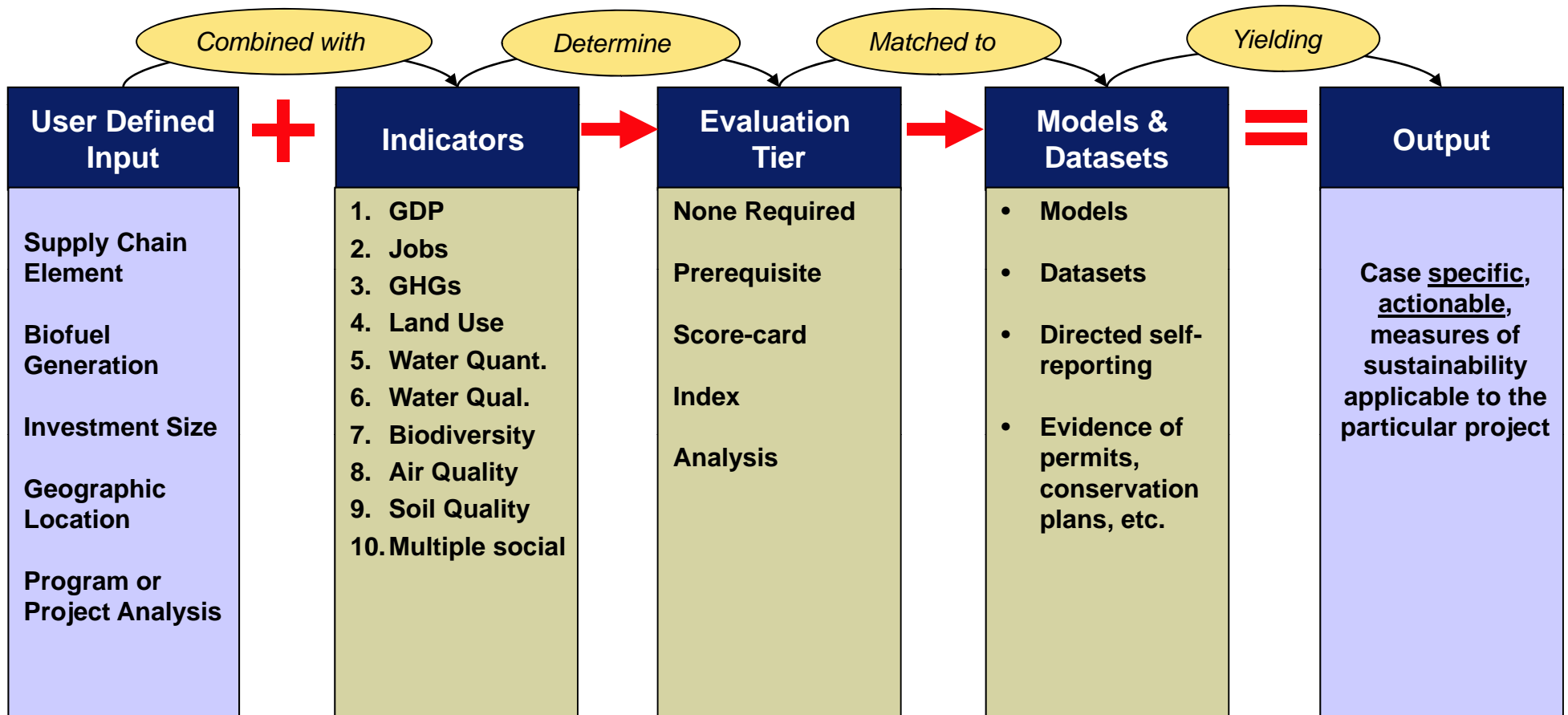
Based on multi agency feedback and our own analysis, we believe that the prototype must effectively address multiple considerations



The prototype is based on a tiered analytical protocol designed to facilitate effective, least-cost sustainability assessments



This structure aids the specification of analytical methodologies for any permutation of the design considerations noted earlier



The team has selected strawman/default inputs for these elements of the framework; they can be adapted as required by context, expert review, or availability of new data

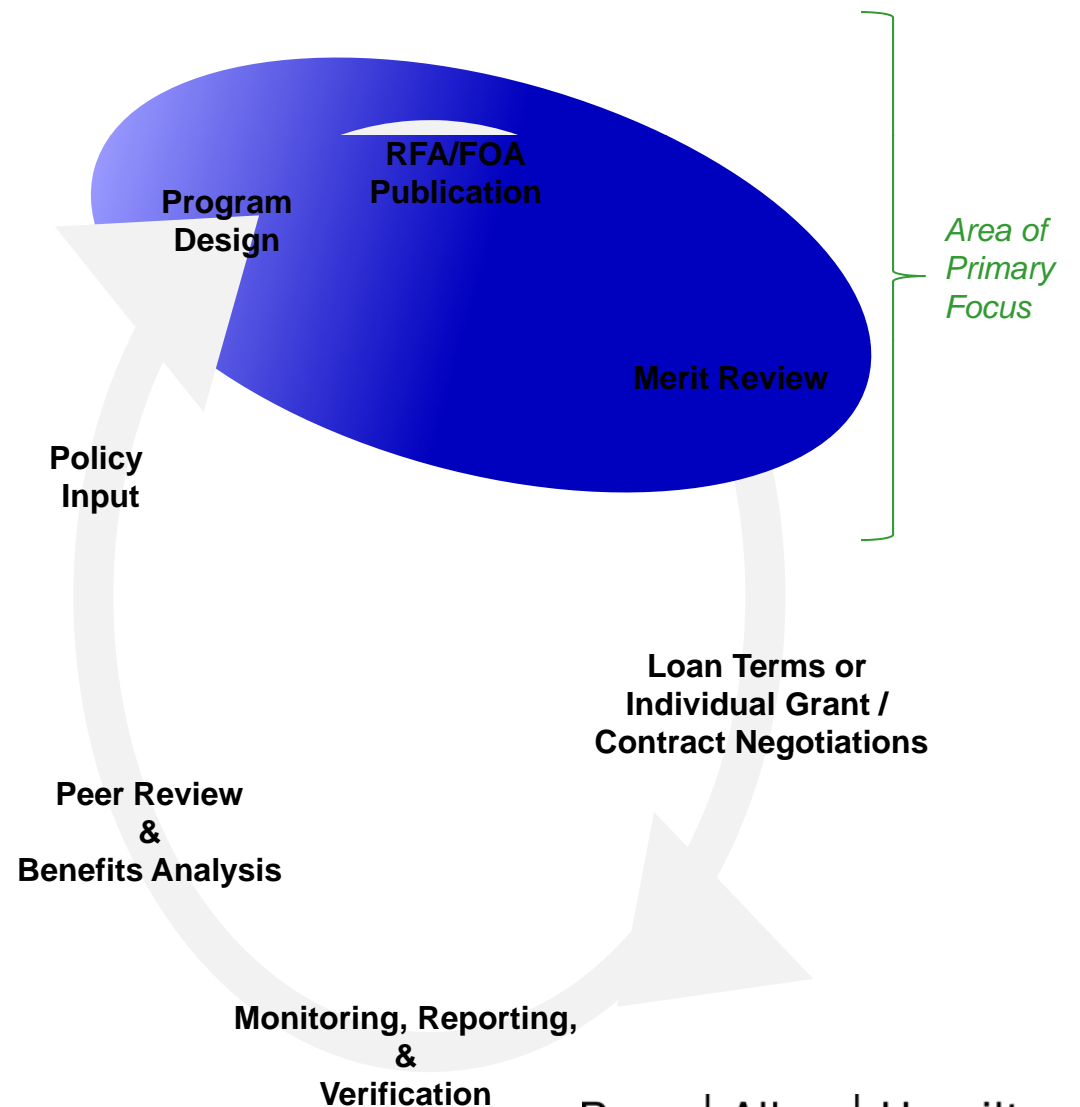
Default indicators and associated methodologies have been selected

Each pillar...	...is broken into a sub-element...	...and assigned a specific indicator...	...and methodologies
Economics	Macroeconomic	<ul style="list-style-type: none"> • Job creation • Economic activity 	<ul style="list-style-type: none"> • SEBAS, IMPLAN, OR USDA Economic outreach tool
	Microeconomic	<ul style="list-style-type: none"> • Financial viability 	<ul style="list-style-type: none"> • Business viability assessments • Deployment viability assessment
Environment	Air	<ul style="list-style-type: none"> • GHG emissions • Criteria air pollutants 	<ul style="list-style-type: none"> • GREET
	Water	<ul style="list-style-type: none"> • Quality • Supply 	<ul style="list-style-type: none"> • SWAT, RUSLE, ASPEN, APEX, AGNPS, geospatial data
	Land	<ul style="list-style-type: none"> • Land use • Soil Quality • Biodiversity • Solid waste 	<ul style="list-style-type: none"> • RUSLE, APEX, geospatial data
	Cross-cutting	<ul style="list-style-type: none"> • Assessment of management sophistication / preparedness 	
Social	Community Impacts	Legal and Institutional Compliance	<ul style="list-style-type: none"> • Labor rights, Public Health & Safety, Legal compliance included as prerequisites
		Public Health & Safety	<ul style="list-style-type: none"> • Avail. training and health management plan
		Public Outreach	<ul style="list-style-type: none"> • Local community involvement
	Human Development	Environmental Justice	<ul style="list-style-type: none"> • Proximity to disadvantaged communities
		Equity	<ul style="list-style-type: none"> • Self identification of underserved community & locally produced products
	Food security	Capacity Building	<ul style="list-style-type: none"> • Availability of training programs
		Food	<ul style="list-style-type: none"> • % of income spent on staple crops • Modeling using AGLINK-COSIMO

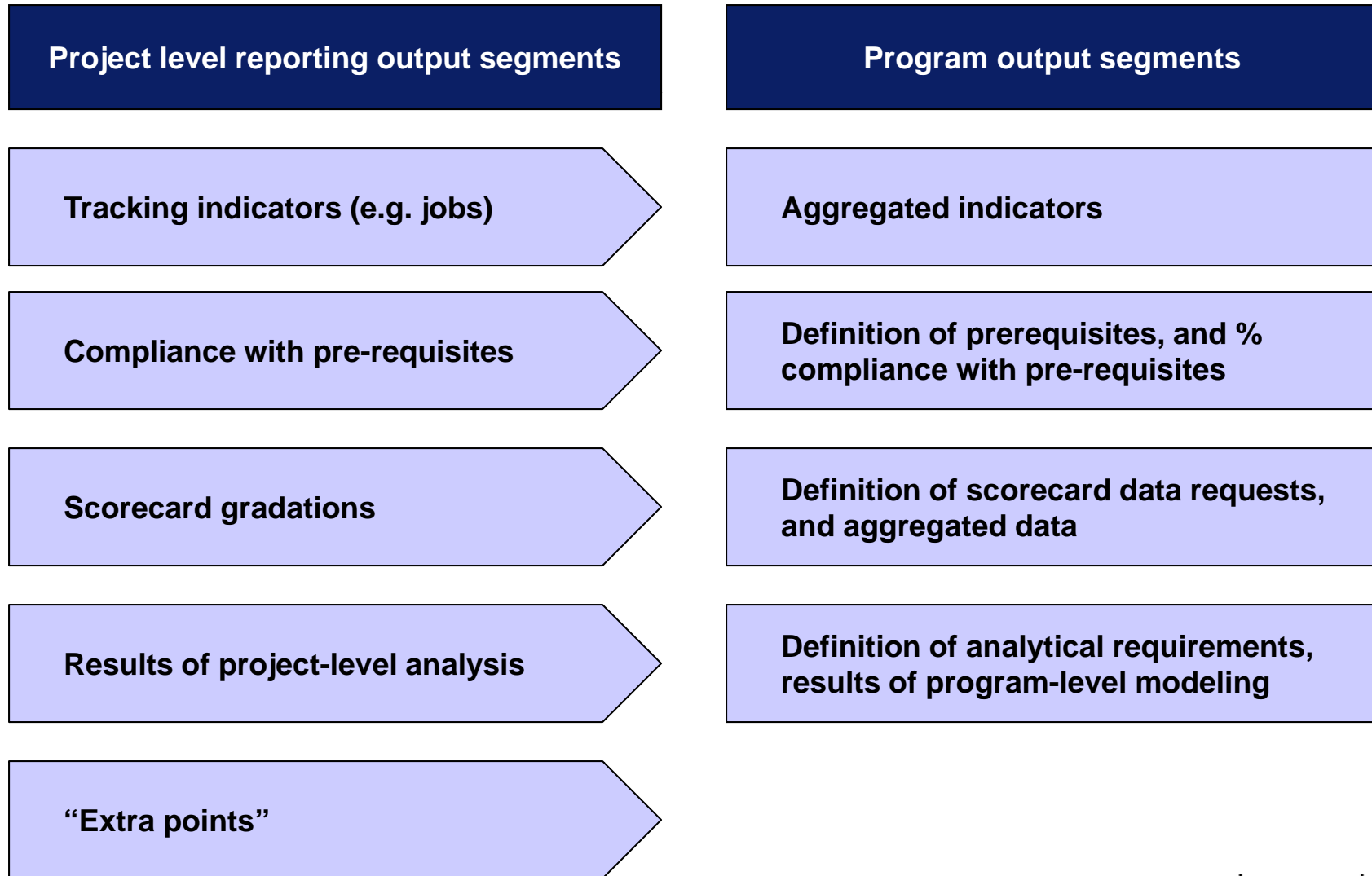
As a next step, we have begun processing case studies to illuminate how the prototype might work and how it could be used

Case studies will inform & demonstrate how outputs could be applied

- These will be used to:
 - Test the prototype
 - Determine utility of outputs
 - Organize reporting
- Case studies have been selected to test a diversity of project:
 - Commercial stages;
 - Investment values;
 - Supply chain elements;
- Specific projects include:
 - Conversion plant loan guarantee;
 - Feedstock pre-processing project;
 - Feedstock R&D project



At present, we are considering the utility of defined reporting outputs at both the project and program levels



Discussion

- ▶ Adequacy of indicators
- ▶ Appropriateness of the associated analytical tools
- ▶ Other sustainability-related initiatives we should be aware of

Next Steps

- ▶ Complete prototype development activities now underway
 - Finalize test cases to demonstrate outputs and potential uses
 - Review proposed indicators, analytical methodologies
 - Develop output reports

- ▶ Convene expert reviews

- ▶ Contact Information
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