Setting the Stage:
Synthesis of Discussions in Workshops 1 & 2

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"Development, transfer and dissemination of clean and environmentally sound technologies in developing countries"

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CONTEXT
Development needs of developing countries
(focus on agriculture and energy)

Developing country energy needs:

- Expansion of affordable energy supply and services *('adequacy' and 'affordability')*
- Improving the efficiency of conversion of energy supply into energy services *('efficiency')*

Different countries have very different needs

Range of needs within a country

Issues such as energy access cut across many countries

Developing country agriculture needs:

- Enhancing food production and access *('adequacy' and 'affordability')*
- Improving the productivity of agriculture *('efficiency')*

Different countries have very different needs (but situation critical for some regions, e.g., sub-Saharan Africa)

Range of needs within a country

Issues such as food security cut across many countries

Sustainability dimensions critical:

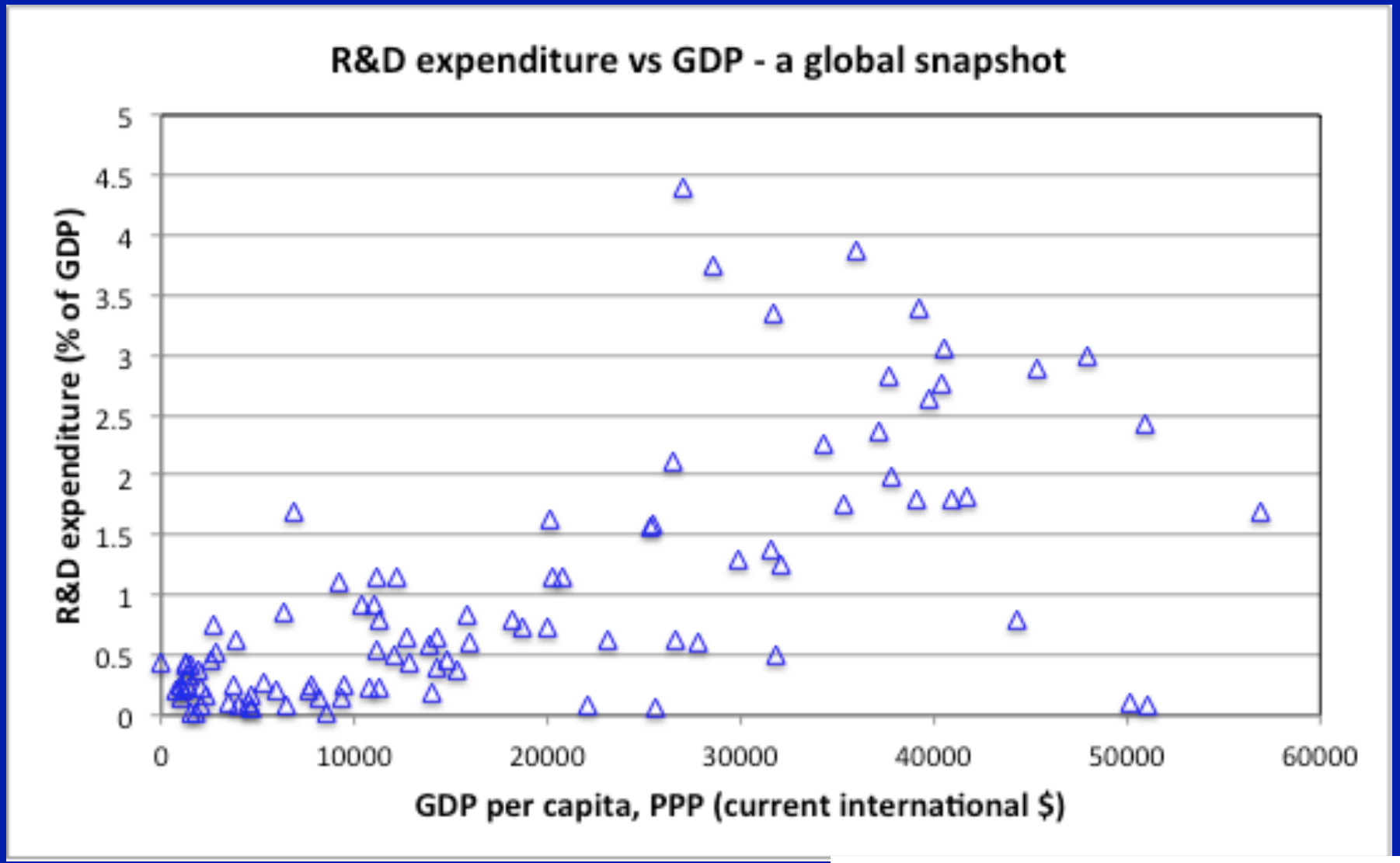
- Environment: Staying within planetary boundaries (e.g., climate, water use)
- Economic: Ensuring livelihoods for all, especially marginalized/at-risk populations (e.g., market access)
- Social: Protecting health & safety, culture

['modernity' and 'equity']

Addressing these multiple dimensions of sustainability while meeting major developmental needs of the kind mentioned earlier is THE challenge for the 21st century

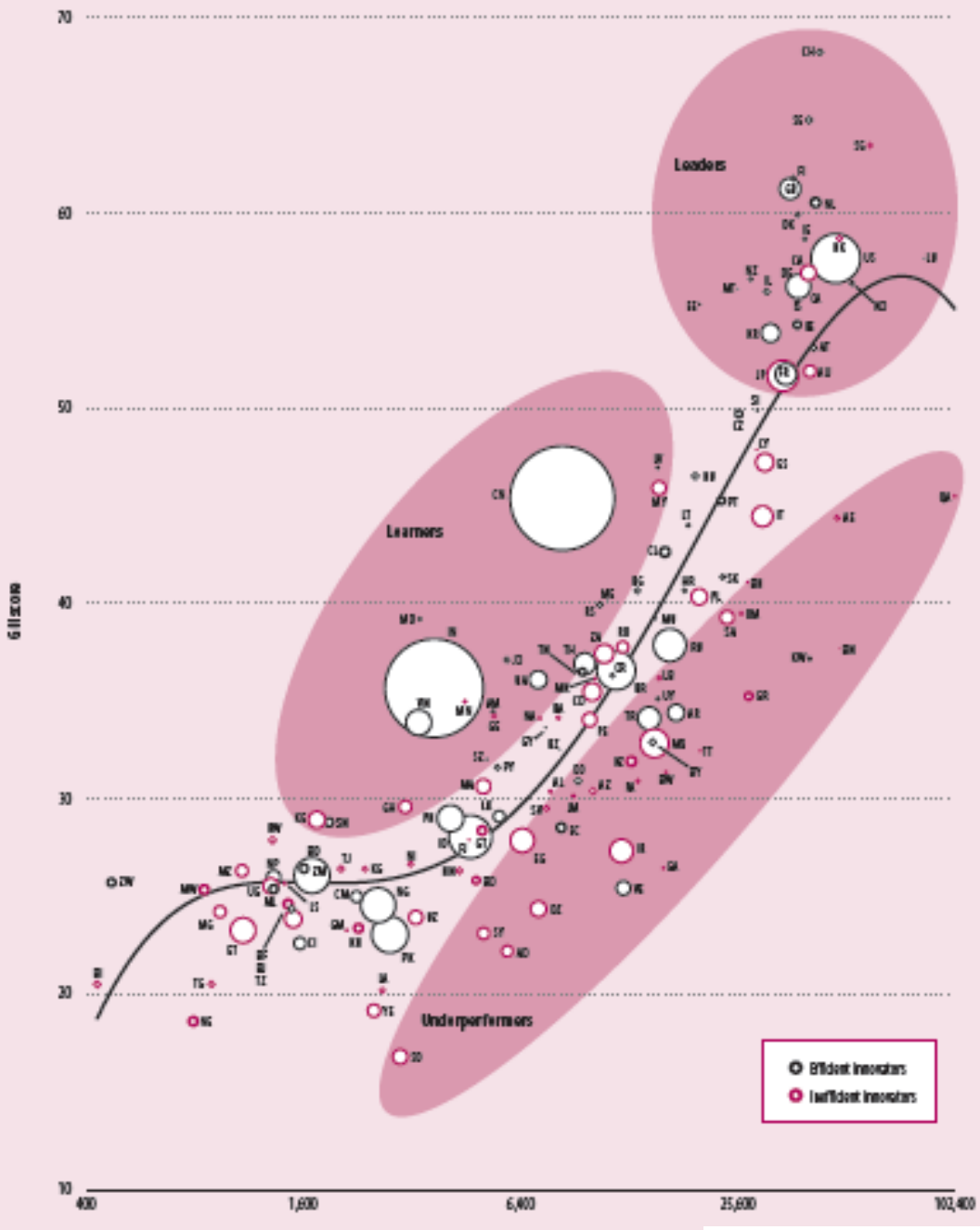
CONTEXT

Technology/innovation capabilities of developing countries



Source: World Development Indicators, World Bank

Innovation index vs. GDP/capita



Source: Global Innovation Index Report 2012

Leveraging technology to meet development and sustainability imperatives

Key messages:

- Technology offers great potential in simultaneously meeting development and sustainability challenges – but realizing potential of technology non-trivial, given relatively weak S&T and innovation capabilities in most developing countries

- Development needs vary from country to country but many needs and issues are cross-cutting

Key messages (contd):

- Leveraging technology requires paying attention to the full innovation cycle (R&D, demonstration, commercialization) and large-scale deployment – ultimately technologies have to deployed at scale to yield outcomes we desire
- Must focus on all key elements – technology, finance, markets, policy – across the full innovation cycle to have effective and accelerated leveraging of technology.
- Need both 'supply (technology) push' and 'demand (market) pull'
- Technology embedded in larger context (e.g., ag markets)

Need 'systems-level' approach

Key messages (contd):

- Enormous number of actors generally involved in technology development and deployment – national governments, firms, academia, financial actors, intergovernmental agencies, civil society – with different actors playing roles in different stages of innovation cycle (also varies across technologies and countries)
- Need to integrate knowledge and input from various sources and stakeholders
- Sharing of knowledge and practices (within and across countries) can play important role

Networks and partnerships (within and across countries) are key
Coordination, facilitation, and strategic intervention critical

Key messages (contd):

- Many technologies to address development and sustainability imperatives already exist – technology transfer can play important role. But still need local capabilities to adapt and deploy.

- New technologies also needed, especially for "unaddressed" needs, e.g., improved cookstoves, small-scale biomass energy, etc.

- Must integrate (and prioritize across) social, economic, and environmental dimensions

Need technology R&D of different types as well as technology transfer ('globally new' and 'locally new' innovation) for ensuring ESTs available at affordable cost.

Key messages (contd):

- Different countries have different technology needs commensurate with their development needs and social, economic, institutional, and cultural context

- Different countries have very different capabilities/economic industrial structures and therefore very different innovation gaps
  - Technology assessment and prioritization ('what to do')
  - Technology readiness and implementation ('how to do it')
  - Monitoring and assessment ('how are we doing')
  - Learning and experience sharing ('how to do better')

No 'one shoe fits all" approach – different needs, different gaps, different context, different pathways of implementation

Key messages (contd):

- Enormous range of activities already underway, e.g.,
  - UNEP Technology Needs Assessments
  - IRENA Renewable Readiness Assessment
  - COSA Certification programs
  - World Bank Climate Innovation Centers
  - CGIAR
  - Brazil-Mozambique partnership on retrovirals
  - National-level programs
  - Civil-society led programs (e.g., Systems of Rice Intensification; Farmer-led Global Seed Diversification)

Challenge is to coordinate and integrate across activities/programs – and identify and address gaps

Need to build local capabilities as well as international efforts (technology development as well as facilitation of local deployment)