



Formal TVET: exploring the opportunities

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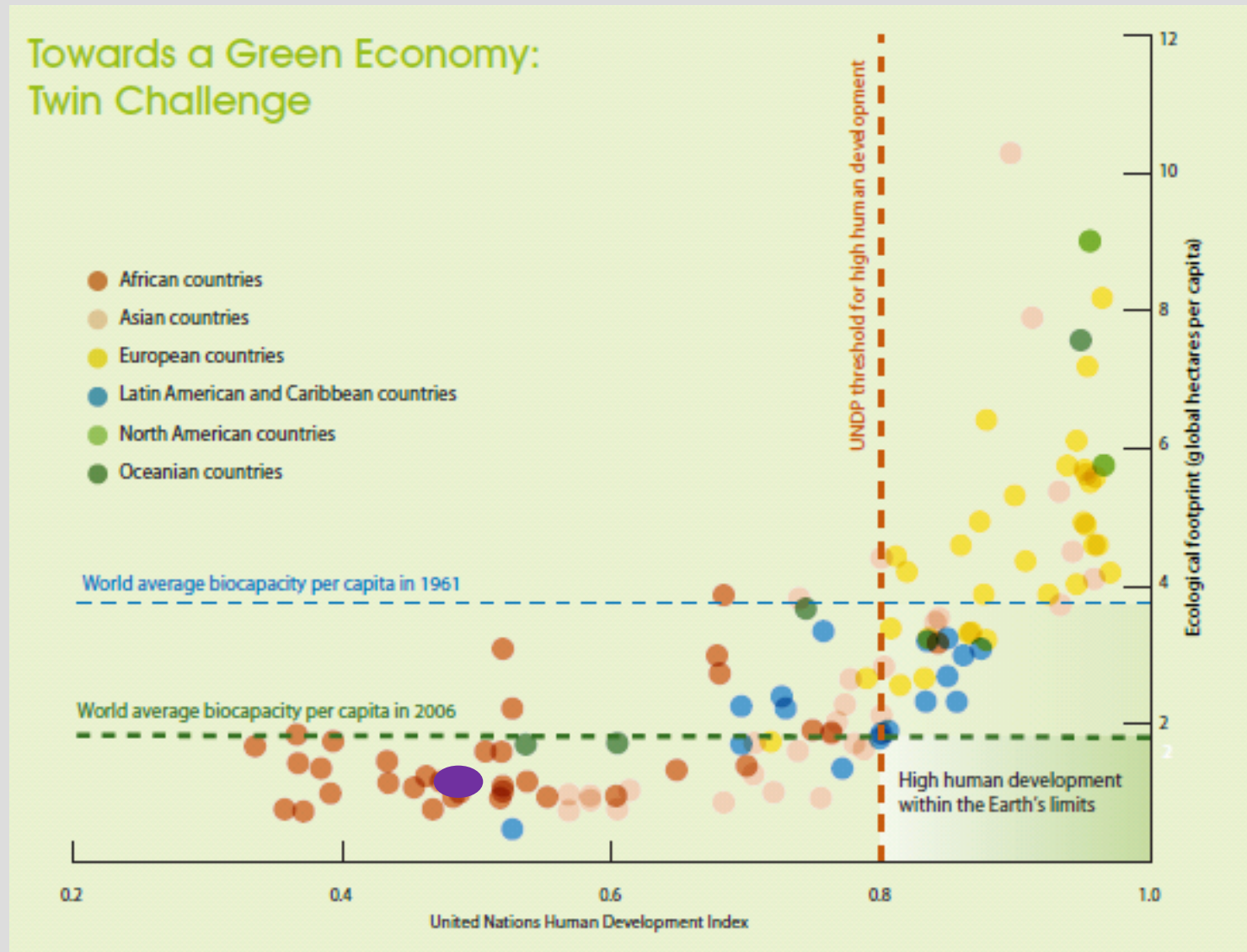
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Structure

1. TA-7879 REG: Education and Skills for Inclusive Growth and Green Jobs in Asia: lessons learnt – greening of TVET
2. Challenges of implementation
3. Opportunities to move forwards
4. Conclusions

TVET should contribute to address a dual challenge

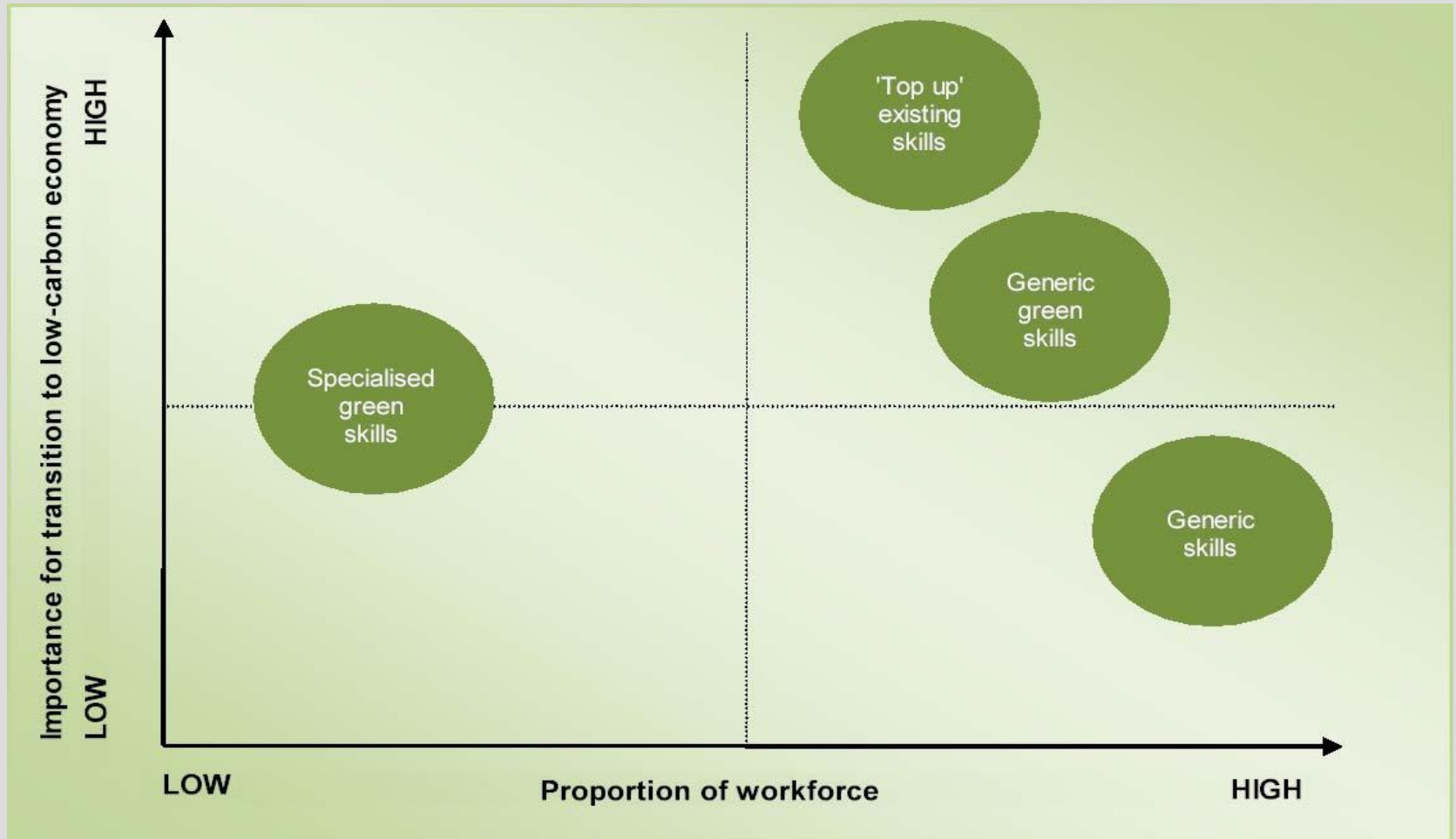
Lessons learnt



Source: *The Ecological Wealth of Nations: Earth's Biocapacity as a New Framework for International Cooperation*. Global Footprint Network (2010), p. 13; Human Development Index data from *Human Development Report 2009 – Overcoming Barriers: Human Mobility and Development*. UNDP (2009).

Doing better in specialised green skills

Lessons learnt



Specialised green skills: Indian Polytechnics

Civil Engineering – third semester –

CE-340 Water & Waste Water Engineering

4hrs lectures, 2 hrs practicum per week (Board of Technical Education, Delhi)

Content

Water supply (including quantity, sources, intakes and conveyance, quality of water, filtration, disinfection, storage of clear water and its distribution)

Waste water (including design of sewers, construction and maintenance of sewers, characterisation and examination of sewage, disposal of sewage, treatment of sewage, septic and imhoff tanks)

Generic green skills

Common skills for ESD (Drayson, Bone & Agombar, 2011)	Foundational skills (Singapore Workforce Development Agency, 2006)	Employability skills (ACIC & BCA, 2002)	Core skills necessary for green jobs (ILO, 2011a)
Communication, teamwork, understanding stakeholder perspective	Communications and relationship management	Communication, teamwork	Communication and negotiation skills; consulting skills
System thinking, risk analysis	Problem-solving and decision-making,	Problem-solving, learning and technology	Systems and risk analysis, coordination and holistic approaches towards economic, social and ecological objectives
Think critically about values	Self-management	Self-management	Environmental awareness and willingness to learn about SD
Ability to separate number, quantity, quality and value	Workplace literacy and numeracy; work-related life skills, ICT		IT and language skills
Apply learning to action	Initiative and enterprise, health and workplace safety	Initiative and enterprise, planning and organising	Entrepreneurial skills; strategic and leadership skills; adaptability and transferability skills
Recognise and reward actions that favour the future	Global mindset		Innovation skills; marketing skills to promote greener products and services

What is required for greening TVET

Attitude change			
Teaching and learning			Green campus
Content		Pedagogy	
Generic skills	Specific skills	Learner-oriented	

Good practices (Sri Lanka)

- Green campus** (to develop attitudes, Don Bosco; landscape designer, Environmental Committee – NVTI)
- Generic skills** (e.g., Environmental Studies, Global Trends and Current Issues module) SLITA
- Specific skills** (topping up: auto mechanic, emission measurement; A/C technician – refrigerant recovery process)
- Initiatives by individuals** (topping up: auto mechanic, hybrid car training module; waste management – car oil, breaks)
- Students projects in industry** (on topic identified by the student, possible on greening)

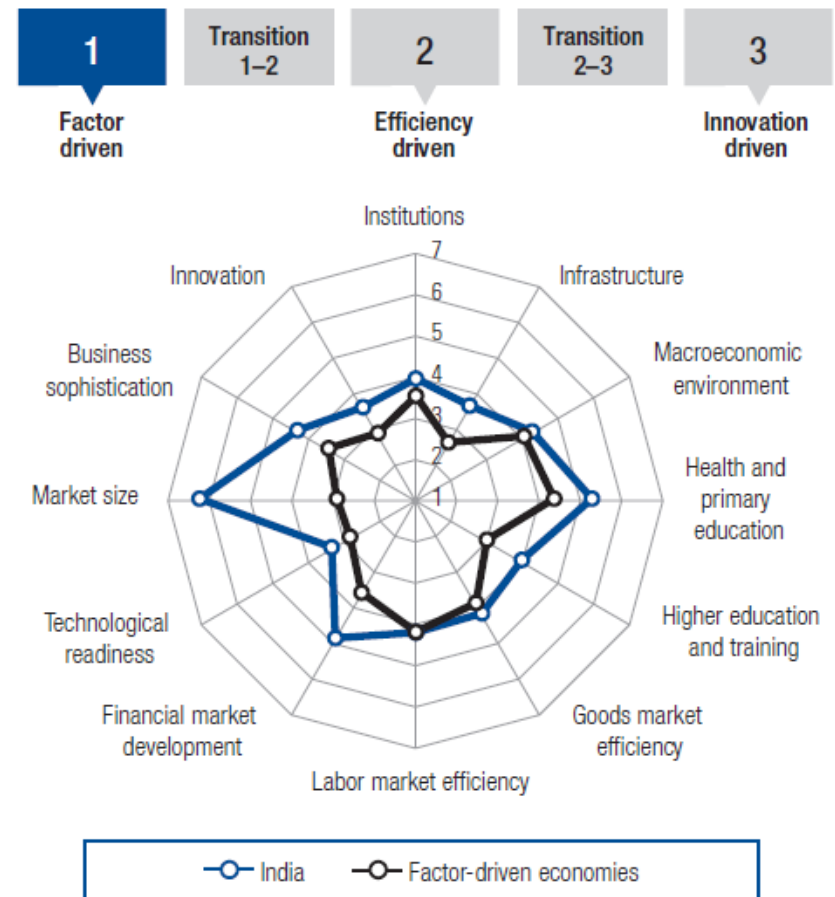
Implementation approaches

- Need a holistic framework for greening TVET
- Need to increase general awareness of greening
- A collaborative approach is required
- The levels of awareness and readiness are different across the governments and TVET administrators (e.g. TVEC in Sri Lanka is ready for collaboration whereas in India, additional work is required)
- Capacity building at all levels is required
- Governments' leadership in establishing regulations, curriculum development and accreditation is crucial
- Teachers and practitioners are the key change agents

2. Challenges of implementation: India Global Competitiveness Report 2012-2013

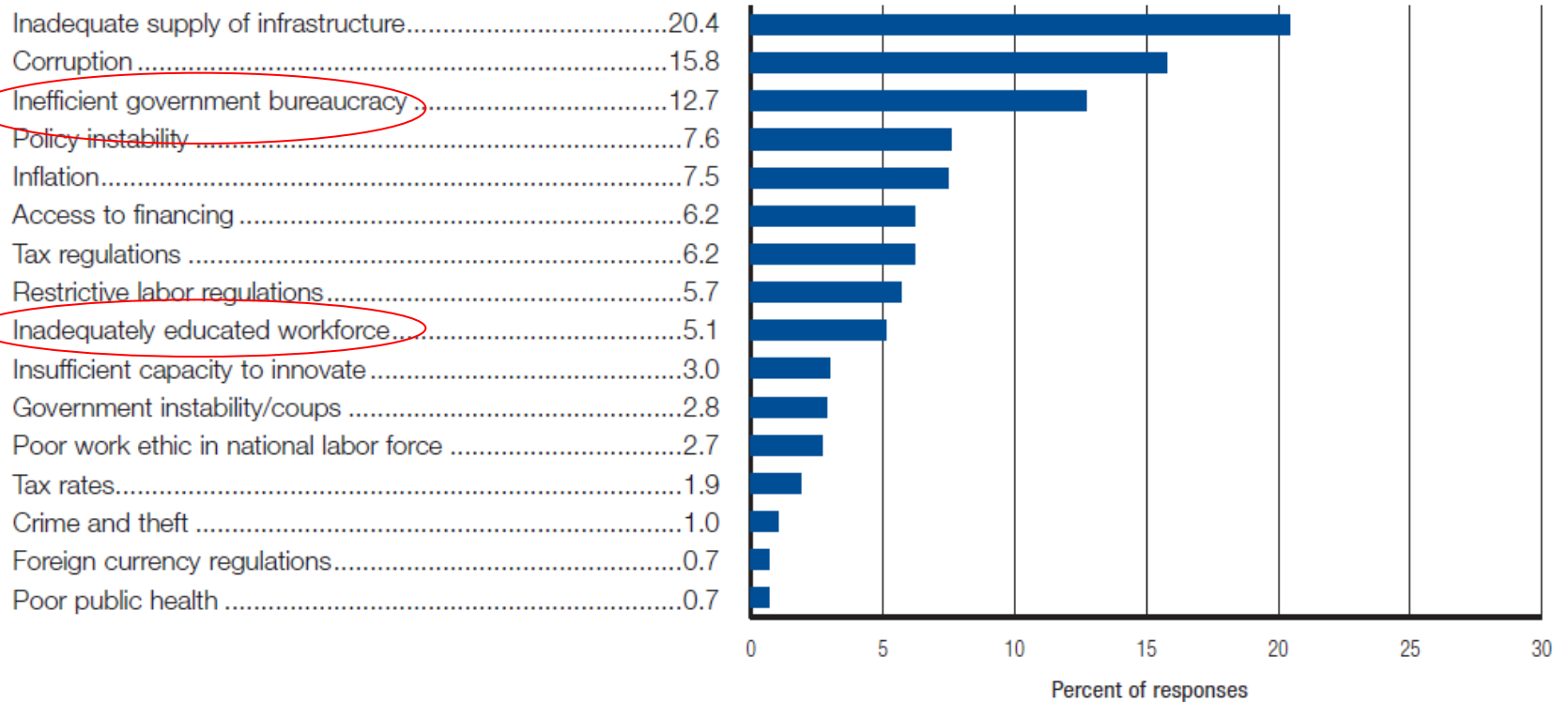
	Rank (out of 144)	Score (1-7)
GCI 2012-2013	59	4.3
GCI 2011-2012 (out of 142).....	56.....	4.3
GCI 2010-2011 (out of 139).....	51.....	4.3
Basic requirements (60.0%)	85	4.3
Institutions	70.....	3.9
Infrastructure	84.....	3.6
Macroeconomic environment	99.....	4.3
Health and primary education.....	101.....	5.3
Efficiency enhancers (35.0%)	39	4.5
Higher education and training.....	86.....	4.0
Goods market efficiency	75.....	4.2
Labor market efficiency	82.....	4.2
Financial market development	21.....	4.9
Technological readiness.....	96.....	3.4
Market size.....	3.....	6.2
Innovation and sophistication factors (5.0%)	43	3.9
Business sophistication	40.....	4.3
Innovation.....	41.....	3.6

Stage of development



India

The most problematic factors for doing business



High skills level

Programs specifically designed for training in greening practices relevant to sustainable development Missions by such organisations as

- Alliance for an Energy Efficient Economy,
 - India National Cleaner Production Centre,
 - TERI University,
 - South Asia Programme Centre for Science and Environment,
 - National Productivity Council
- and
- a number of programs at the universities.
 - Training designed for managers and auditors, government officials, supervisors, junior executives and other high ranking personnel (energy efficiency, industrial pollution prevention and control, waste management, noise pollution monitoring).

Low and middle skills level

- Green training is almost absent.
- At the ITIs, Polytechnics, National Institutes of Technology and other vocational training providers there are no visible approaches towards greening.

3. Models for greening TVET

Model 1

- A decentralised private model led by PPP/ private training providers and industry (with government funding and policy direction, through the NSDC, for example).
- Certain risks associated with this model include incomplete coverage, variable quality, and variety of green skills interpretation.

Model 2

- A formal public model led by the government through explicit green skills programs. This model requires a long-term strategy for planning and implementation
- Certain risks associated with this model include time required to develop and implement change and being driven by bureaucracy it might partly ignore industry requirements.

Training providers for the Models

Model 1

- ***Training provided through institutions associated the National Skills Development Corporation***
(e.g., Centum WorkSkills India; BASIX Academy for Building Lifelong Employability; Empower; IL&FS Skills Development Corporation)
- ***Don Bosco network***
- ***National Small Industries Corporation (NSIC)***

Model 2

- ***Indian Training Institutes (ITIs)***
- ***Polytechnics***
- ***National Institutes of Technology***
- ***Skills Development Initiative Scheme (SDIS)***

4. Conclusions

- The introduction of green skills at the low and middle skills levels is extremely important to support India's economic development at the factor driven stage of growth.
- Policy and regulation could play a major role in green restructuring, influencing industries and TVET development.
- In the presence of an inefficient government bureaucracy, strategies for introducing greening in TVET at the low and middle skills levels could be approached from both top (government led) and bottom (private provider/industry led). Thus, two models are proposed.
- Capacity building is required for management and trainers.
- Curriculum renewal for Polytechnics and ITIs should aim at development of a more flexible curriculum allowing each institution to change 5-10% of curriculum in response to industry demands.