Boxes, Figures and Tables

Box 5.1. Lessons on partnership experiences in South Asia

- Partnering is a pragmatic response to the need to accomplish complex tasks that cut across disciplinary, organizations and sectoral mandates, Joint task identification and definition builds partnership. Forced partnerships and ritualistic partnerships have no value and will not be sustained
- Partnership should last as along as there is a shared task to be accomplished and should not be viewed as a permanent linkage
- Not all organizations have the appropriate skill to be good partners
- While clear definition of roles of all partners is important, it also needs to be recognized that the roles of partners change during the innovation process, with different partners assuming greater importance at certain times
- Partnering helps sharing of resources, skills and knowledge and thus is crucial to learning and innovation, Not all organizations have a culture of learning, This restricts their ability to partner and generate institutional innovations
- Rigid institutional and organizational structures, particularly those with hierarchical designs tend to stifle learning and the development of iterative relationships with broader set of partners
- While it is easy to stereotype public, private and NGO organization, and the organizational culture that goes with them, there is a need to examine these more closely in the analysis of project partnership viability
- Successful partners have intuitive ways of identifying each other that relate to shared values of trust and complementarity, shared history built up over the previous partnerships obviously contributes to this.
- Partnership skills are a range of capabilities that help organizations innovate, and that are learnt through interaction with partners and networks
- How organizations learn and build up these skills is not yet entirely clear
- The strength of the learning process in project partners appears to be a key area of capacity development
- Activities that widen the interaction of organizations with other partners and networks are likely to be an important way of building up innovation capabilities, both in individual organizations and in wider national systems

Source: Hall et al, 2004

Box 5.2: Encouraging effective R and D partnerships: Lessons learnt from the Indian Experience

Time - Donors and partners allow atleast one to two years before expecting R and D partnerships to begin to deliver results and achieve impacts, Moreover; where partnerships already exists it may be more efficient and effective to invest in those, rather than establishing new ventures, in order to leverage previous investments

Flexibility - Ensure that management systems provide sufficient flexibility to allow new partners to join over time and others to leave once it is clear that their role has changed or been fulfilled

Leadership - Policy makers need to create an environment that allows, indeed encourages, the delegation of both responsibility and authority to those most closely involved in carrying out the work. This can be done using broad accountability frameworks that monitor impacts and ensure the delivery of results.

Monitoring and evaluation - Partnerships require internal monitoring and evaluation mechanisms that allow them to respond effectively to changing needs and opportunities. Responsibility and authority for implementing this continuing activity should be vested with project leaders and be seen as complementary to formal mid-terms and end-of proejcet monitoring and evaluation activities

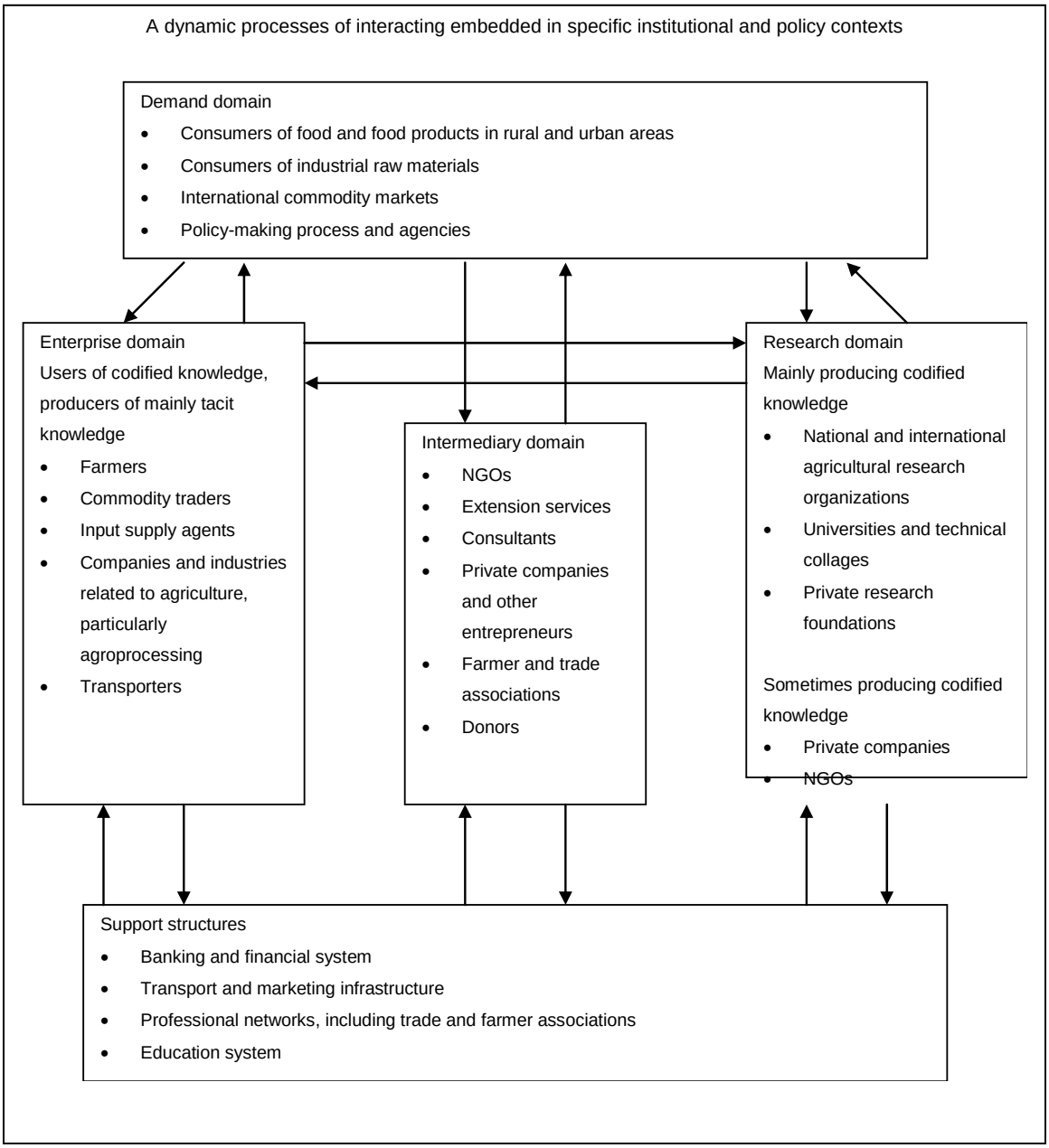
Livelihoods - Project leaders should be formally encouraged to seek innovative ways of empowering local communities. The work of researchers and development specialists from outside the community is all too often guided by predetermined or assumed development priorities, and such deterministic community development activities should be avoided

Transparency - The policies, rules and regulations that govern partnerships need to be designed in ways that ensure transparency, appropriate incentives (and disincentives) aimed at promoting transparency must be put in place

Evaluation - Policy makers need to ensure that the costs and benefits of delivering research through partnerships are appropriately quantified and documented, This will require putting new mechanisms in place specifically to gauge partnership performance, They also need to ensure that the efforts of individuals involved in partnerships do not go unnoticed and unrewarded, This will likely mean changing or augmenting the traditional criteria by which the contribution of individual scientists are judged.

Source: GY Associates and ICAR, 2006

Figure 5.1: Elements of an agricultural innovation system



Source: Adapted from Arnold and Bell (2001:279)

Ref: World Bank (2006) Enhancing Agricultural Innovation: How to go beyond the strengthening of research systems, The World Bank, Washington

Figure 5.2: Adapted from: DFID Social Exclusion Review by Jo Beall, London School of Economics and Laure-Hélène Piron, Overseas Development Institute, May 2005

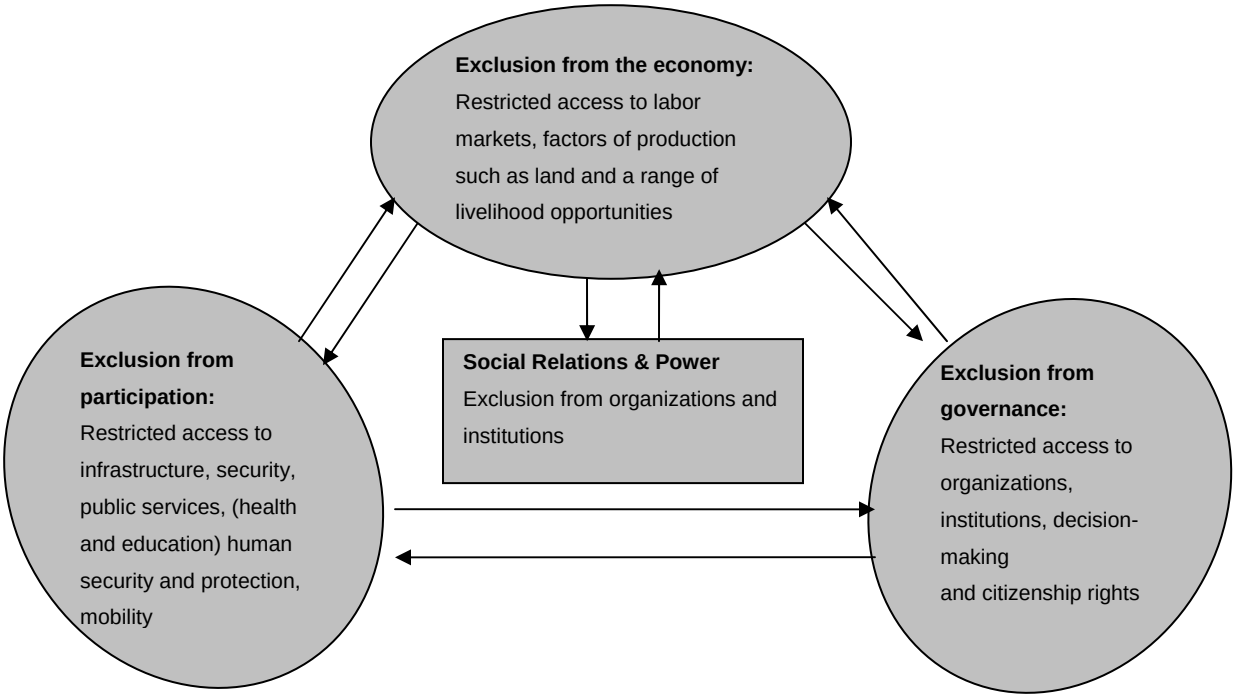


Table 5.1: OECD Estimates of Support to Agriculture, Average 2002-04

	PSE (million US $)	PSE (as percent gross farm receipts	Percent of PSE that is: Most trade-distorting: Market-price support	Most trade-distorting: Output and input subsidies	Less distorting payments 1/
Australia	1,068	4.3	0.8	76.0	23.2
Canada	5,521	22.3	47.8	9.6	42.6
EU 2/	114,274	34.3	54.6	11.7	33.7
Iceland	195	70.3	45.2	42.0	12.8
Japan	49,924	57.7	90.1	6.5	3.5
Korea	18,253	63.1	92.6	2.6	4.9
New Zealand	186	2.3	82.2	17.2	0.6
Norway	2,902	71.3	47.1	25.3	27.6
Switzerland	5,343	70.5	55.7	9.3	35.1
US	40,409	17.0	35.3	27.6	37.1
OECD total/average	254,244	30.3	61.3	13.3	25.4

PSE = Producer Support Estimate

1/ In WTO terms include modestly trader-distorting “blue box” payments as well as minimally trade-distorting “green box” payments

2/ EU-15. Austria, Finland and Sweden are included in the OECD and EU totals for all years

Source: OECD (2005)

Table 5.2: Appendix III: Pacific Island Forum Country Participation In Trade Agreements and Groupings 2004

	FIC	LDCs	Small Island States	SPARTECA	PICTA	PACER	Lome/ Contonou	WTO	APEC*
Australia				x		x		x	x
Cook Islands	x		x	x	x	x	x		
Federated States of Micronesia	x			x			x		
Fiji Islands	x			x	x	x	x	x	
Kiribati	x	x	x	x	x	x	x		
Marshall Islands	x		x	x			x		
Nauru	x		x	x	x	x	x		
New Zealand				x		x		x	x
Niue	x		x	x	x	x	x		
Palau	x						x		
Papua New Guinea	x			x	x	x	x	x	x
Samoa	x	x		x	x	x	x	a	
Solomon Islands	x	x		x	x	x	x	x	
Tonga	x			x	x	x	x	a	
Tuvalu	x	x	x	x			x		
Vanuatu	x	x		x			x	a	

a = in process of accession

* The Pacific Islands Forum has observer status at APEC

Source: Kelsey, 2005

Table 5.3: Typology of TRM misappropriation

Status of TRM knowledge	Appropriation	Legal situation
1. Public available	As received	Invalid patent (lack of novelty)
2. Undisclosed	As received	Questionable inventor-ship
3. Publicly available / undisclosed	Derivatives	Valid patents, if an inventive step proven
4. Publicly available	Commercially exploited	No patents granted

Source: Correa, 2002

Table 5.4: Protection of TRM: how relevant IPRs are?

Objectives	IPRs	Other tools
Saving data (conservation)	1	Registries, data bases
Collecting data	1	Contract-based benefit sharing Registries, data bases
Preventing erosion of knowledge	1	Recognition of land rights, cultural integrity, customary laws, preservation of natural environment
Ensuring continuous improvement / innovation	1	Recognition of land rights, cultural integrity, customary laws, preservation of natural environment
Benefit sharing	2	Access legislation, contracts, application and recognition of customary laws
Self-determination	1	Recognition of various rights in international law – including participatory decision making, recognition of customary law
Development / commercial	3	Recognition of land rights, preservation

Source: Correa 2002

Table 5.5: Pacific Island Membership of Selected International Environmental Agreements, by Country

COUNTRY	UN Framework Convention on Climate Change (UNCCC)	UN Convention to Combat Desertifica-tion (UNCCD)	Convention on Biological Diversity (CBD)	Vienna Convention for the Protection of the Ozone Layer	Convention on International Trade in Endangered Species (CITES)	UN Convention on the Law of the Sea	Basel Convention on Hazardous Waste	Cartagena Protocol on Biosafety under the CBD
COOK ISLANDS	Party	party	party			Party		signed, not ratified
FIJI	Party	party	party	party	party	Party		ratified
KIRIBATI	Party	party	party	party			party	signed, not ratified
MARSHALL ISLANDS	Party	party	party	party		Party		ratified (accession)
MICRONESIA (Federated States of)	Party	party	party	party		Party	party	
NAURU	Party	party	party	party		Party	party	ratified (accession)
NIUE	Party	party	party			signed, not ratified		ratified (accession)
PALAU	Party	party	party	party		Party		ratified
PAPUA NEW GUINEA	Party	party	party	party	party	Party	party	
SAMOA	Party	party	party	party		Party		ratified
SOLOMON ISLANDS	Party	party	party	party		Party		
TONGA	Party	party	party	party		Party		

COUNTRY	UN Framework Convention on Climate Change (UNCCC)	UN Convention to Combat Desertifica-tion (UNCCD)	Convention on Biological Diversity (CBD)	Vienna Convention for the Protection of the Ozone Layer	Convention on International Trade in Endangered Species (CITES)	UN Convention on the Law of the Sea	Basel Convention on Hazardous Waste	Cartagena Protocol on Biosafety under the CBD
TUVALU	Party	party	signed, not ratified	party		signed, not ratified		
VANUATU	Party	party	party	party	party	Party		

Table 5.6: Current Environmental Issues in PACIFIC ACP Countries

COUNTRY	Current issues
COOK ISLANDS	NA
FIJI	deforestation; soil erosion
KIRIBATI	heavy pollution in lagoon of south Tarawa atoll due to heavy migration mixed with traditional practices such as lagoon latrines and open-pit dumping; ground water at risk
MARSHALL ISLANDS	inadequate supplies of potable water; pollution of Majuro lagoon from household waste and discharges from fishing vessels
MICRONESIA (Federated States of)	overfishing, climate change, pollution
NAURU	limited natural fresh water resources, roof storage tanks collect rainwater, but mostly dependent on a single, aging desalination plant; intensive phosphate mining during the past 90 years - mainly by a UK, Australia, and NZ consortium - has left the central 90% of Nauru a wasteland and threatens limited remaining land resources
NIUE	increasing attention to conservationist practices to counter loss of soil fertility from traditional slash and burn agriculture
PALAU	inadequate facilities for disposal of solid waste; threats to the marine ecosystem from sand and coral dredging, illegal fishing practices, and overfishing
PAPUA NEW GUINEA	rain forest subject to deforestation as a result of growing commercial demand for tropical timber; pollution from mining projects; severe drought
SAMOA	soil erosion
SOLOMON ISLANDS	deforestation; soil erosion; many of the surrounding coral reefs are dead or dying
TONGA	deforestation results as more and more land is being cleared for agriculture and settlement; some damage to coral reefs from starfish and indiscriminate coral and shell collectors; overhunting threatens native sea turtle populations
TUVALU	groundwater is not potable; beachhead erosion because of the use of sand for building materials; excessive clearance of forest undergrowth for use as fuel; damage to coral reefs from the spread of the Crown of Thorns starfish; Tuvalu is very concerned about global increases in greenhouse gas emissions and their effect on rising sea levels, which threaten the country's underground water table; in 2000, the government appealed to Australia and New Zealand to take in Tuvaluans if rising sea levels should make evacuation necessary
VANUATU	a majority of the population does not have access to a potable and reliable supply of water; deforestation

Table 5.7: Illustrative matrix of technology

		FUNCTION INVESTMENT CAPABILITIES		PRODUCTION CAPABILITIES			LINKAGE CAPABILITIES (within economy)
		Pre-investment	**Project execution**	**Process engineering**	**Product engineering**	**Industrial engineering**	
DEGREE OF COMPLEXITY	**BASIC** Simple Routine *(Experience based)*	Pre-feasibility and feasibility studies, site selection, scheduling of investment	Civil engineering (construction), associated services, equipment, erection, commissioning.	Debugging, balancing, quality control, preventive maintenance, assimilation of process technology.	Assimilation of product design, minor adaptations to market needs	Work flow, scheduling, time-motion studies, Inventory control.	Local procurement of goods and services; information exchange with suppliers
	INTERMEDIARY Adaptive Duplicative *(Research based)*	Search for technology source. Negotiation of contracts, bargaining suitable terms, information systems	Equipment procurement, detailed engineering training and recruitment of skilled personnel.	Equipment stretching; process adaptation and cost saving, licensing new technology.	Product/quality improvement; licensing and assimilation new imported product technology	Monitoring productivity: improved coordination	Technology transfer of local suppliers, coordinated design, S&T links
	ADVANCED Innovative Risky *(Research based)*		Basic process design. Equipment design and supply.	In-house process innovation, basic research.	In-house product innovation, basic research.		Turnkey capability, cooperative R&D, licensing own technology to others

Source: Lall (1990: 21; 1992: 167)

Table 5.8: International Reform Initiatives for Agricultural Advisory Services (Rivera and Alex, 2005)

Case Study	Governance Structure			Actors involved			Type of Service			Approach		Reform Process		Focus
	Decentralization	Privatization	Contracting	Public-Private Partnerships	Role of NGOs	Producer Organizations	Commercial Services	Diverse Services	Cost Sharing/Recovery	Demand-Driven Programs	Participatory Approaches	National Strategies	Reform Processes	Poverty Focus
Asia														
China	xxx		x			x	x		x					
India	xxx	xxx				x	x	x					x	
Bangladesh	x		x									xxx	xxx	
Nepal	x		x									x	x	
Pakistan				x			xxx					x		
Vietnam	x						x	x				x		xxx
Philippines & Indonesia/ FFS						x					xxx	x		
Africa														
Mali		x		x		x	xxx					xxx	xxx	
Niger			x	x	x		xxx					x		x
Benin	xxx		x						x	xxx	x		x	
Ghana	xxx						x			x				
Kenya			x	x				x	x	xxx	x	x		x
Uganda	xxx		x						x	xxx	xxx	xxx	xxx	
Tanzania						xxx					xxx			
Malawi						xxx	xxx							x
Mozambique	x	x	xxx		x							xxx	x	
Zimbabwe	xxx							x		xxx	x	x		
Egypt											xxx	x		
South Africa				xxx			x					x	x	x
Latin America														
Colombia and Latin America				x		xxx				x	x			x
Nicaragua			xxx									x		xxx
Honduras	x		xxx							x		x		
Nicaragua		xxx	x						x		x	xxx	x	
Chile			xxx						x			xxx	x	

Case Study	Governance Structure			Actors involved			Type of Service			Approach		Reform Process		Focus
	Decentralization	Privatization	Contracting	Public-Private Partnerships	Role of NGOs	Producer Organizations	Commercial Services	Diverse Services	Cost Sharing/Recovery	Demand-Driven Programs	Participatory Approaches	National Strategies	Reform Processes	Poverty Focus
Ecuador			xxx			xxx			x	x		x		
Venezuela	xxx		xxx			xxx		x	x	x		x	x	
Brazil				xxx	x	x								
Uruguay		x	xxx							x		x	xxx	
Trinidad and Tobago	xxx												xxx	

xxx: Major element, xx: significant element, x: some part of overall reform package

Source: Adapted from Rivera and Alex (2005)

Table 5.9: Policy options by country

RAND's country groupings resulted from a composite S&T capacity index of 150 countries created from available indicators of S&T investment, infrastructure and output, including bibliometric literature patterns and interviews with US-based scientists collaborating with scientists internationally	**24 Scientifically Proficient Countries:** Azerbaijan, Belarus, Brazil, Bulgaria, China, Croatia, Cuba, Czech Republic, Estonia, Greece, Hungary, India, Lithuania, Luxembourg, New Zealand, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Ukraine	**24 Scientifically Developing Countries:** Argentina, Armenia, Benin, Bolivia, Chile, Colombia, Costa Rica, Egypt, Hong Kong, Indonesia, Iran, Kuwait, Latvia, Macedonia, Mauritius, Mexico, Moldova, Mongolia, Pakistan, Turkey, Turkmenistan, Uzbekistan, Venezuela, Yugoslavia, FR	**80 Scientifically Lagging Countries:** Burundi, Central African Rep, Congo, Dem. Rep., Ecuador, Gabon, Georgia Guatemala, Iraq, Jordan, Kazakhstan, Kyrgyz Republic, Malaysia, Nepal, Panama, Peru, Philippines, Saudi Arabia, Sri Lanka, Syrian Arab Rep., Tajikistan, Thailand, Togo, Tunisia, Uganda, United Arab Emirates, Uruguay, Vietnam
Policies for Human Resources Development	**Policies for Primary and Secondary Education** • Further strengthen science curricula in the basic and secondary sciences, ensuring the use of hands-on approaches to teaching, student access to ICTs, etc. • Utilize the results of	**Policies for Primary and Secondary Education** • Strengthen science curricula in the basic and secondary sciences, ensuring the use of hands-on approaches to teaching • Provide updated science teacher training	**Policies for Primary and Secondary Education** • Incorporate basic science education into the primary and secondary level curricula • Provide sufficient training to primary and secondary level teachers so that they are prepared with the skills

international student achievement assessments, such as the TIMSS and PISA in the reform and modernization of basic and secondary sciences curricula.

Policies for Technical, Scientific and Engineering Education

- Further promote diversification in knowledge delivery between institutes of different types from polytechnics to community colleges, distance education and adult learning centers and open universities.
- Foment relationships with the private sector to ensure market relevance of skills taught
- Ensure equity in access to various types of post-secondary education

Policies for Scientific Research and Graduate Study

- Link the conduct of research and advanced training in the university setting to the productive sector through partnerships with national research laboratories publicly-funded incubators, etc [See OED 1997]
- Articulate a national research agenda to guide the funding, prioritization and advancement of those specific fields of research with high importance to national development and international competitiveness
- Expand grant programs for graduate study and research in disciplines of

- Utilize the results of international student achievement assessments, such as the TIMSS and PISA in the reform and modernization of basic and secondary sciences curricula.

Policies for Technical, Scientific and Engineering Education

- Promote diversification in knowledge delivery between institutes of different types from polytechnics to community colleges, distance education and adult learning centers and open universities.
- Foment relationships with the private sector to ensure market relevance of skills taught

Policies for Scientific Research and Graduate Study

- Encourage the conduct of research and advanced training at home, to create the pool of highly trained specialists needed to access and use available knowledge and begin to advance the frontiers of new knowledge in certain areas of specialization most important for the country's development.
- Fund, manage and develop regional centers of excellence in specific scientific and engineering disciplines
- Link academia to the private sector to further relevancy of research and employability of researches.

necessary to teach basic sciences

- Benchmark effective ness of student learning by participating in international assessments (e.g. TIMSS)

Policies for Technical, Scientific and Engineering Education

- Foment relationships with the private sector to ensure market relevance of skills taught to market needs
- Allow for differentiation of foci between institutions (e.g. institute for specific vocations, automotive schools, etc)
- While ultimately housing high quality universities with strong science and engineering departments is ideal, initially regional centers of excellence with emphasis in specific disciplines may better satisfy the needs of the market given budget constraints

Policies for Scientific Research and Graduate Study

- Focus on creating a few centers of excellence in market-relevant areas of S&T in which the country has a comparative advantage at the regional level.
- Provide grants for scientific research and training abroad coupled with incentive programs to return to minimize brain drain
- Link national development priorities to areas of training and research and concentrate financing on building a few strong academic programs in the identified priority disciplines

	national interest (e.g. science and engineering) • Encourage conditions in the academic setting conducive to private sector investment in research		
Policies for Stimulating Demand for Knowledge in the Productive Sector	**Implicit Policies** • Open to trade and foreign direct investment to foster the inflow of knowledge • Allow for further deepening and diversification of credit markets as new types of firms emerge • Strengthen the intellectual property rights regime to provide incentives for innovation, R&D **Explicit Policies** • Increase information on the benefits of R&D through industry-academia linkages, initial subsidies for contract research with universities, student internships with firms, trade fairs and other events to increase exposure to global buyers • Provide tax incentives to firms engaged in R&D and direct support to SMEs • Foster the creation of shared infrastructure and economics of scale for new firms via technology parks and incubators.	**Implicit Policies** • Open to trade and foreign direct investment to foster the inflow of knowledge • Allow for the deepening and diversification of credit markets as new types of firms emerge • Establish the framework for an IPR regime to provide incentives for innovation, R&D **Explicit Policies** • Increase information on the benefits of R&D through industry-academia linkages, initial subsidies for contract research with universities, student internships with firms, trade fairs and other events to increase exposure to global buyers • Provide tax incentives to firms engaged in R&D and direct support to SMEs • Foster the creation of shared infrastructure and economics of scale for new firms via technology parks and incubators where appropriate • Establish a framework for the protection of indigenous knowledge	**Implicit Policies** • Establish basic macroeconomic stability, including curbed inflation, strong currency, and proper rates of savings and investment • Open to trade and foreign direct investment to foster the inflow of knowledge. • Improve the credit environment for individuals and small businesses **Explicit Policies** • Establish a framework for the protection of indigenous knowledge • Subsidize firm-based training to encourage technology deepening.
Policies for Public Support of S&T	**Funding Science** • Leverage benefits from privately performed research conducted through creative public-private partnerships • Provide public support for S&T that is in the public interest and is unlikely to	**Funding Science** • Leverage benefits from privately performed research conducted abroad and at home through creative public-private partnerships • Provide public support for S&T that is in the public	**Funding Science** • Leverage benefits from privately performed research conducted abroad through creative public-private partnerships • Let he magnitude and urgency of domestic challenges

	receive sufficient funding from the private sector **Monitoring and Evaluating** • Promote transparency, objectivity and peer review and evaluation procedures in determining how to award discretionary research funding. **Governance and Regulation** • Articulate a national science agenda balanced between various sectors and sub-sectoral S&T interests • Improve governmental regulatory capacity in areas concerning public health, public safety, and other areas relevant to S&T. • Ensure equal access to resources for training, funding, and performance across race, gender, etc. • Ensure policy-makers' access to the necessary scientific expertise regarding areas for public debate and decision-making.	interest and is unlikely to receive sufficient funding from the private sector **Monitoring and Evaluating** • Promote transparency, objectivity and peer review and evaluation procedures in determining how to award discretionary research funding. **Governance and Regulation** • Promote high level of openness and public scrutiny and understanding in the sciences • Articulate a national science agenda balanced between leveraging existing knowledge in the sciences and pursuing various areas of national interest and comparative advantage. • Improve governmental regulatory capacity in areas concerning public health, public safety, and other areas relevant to S&T. • Improve metrology, standards and testing to ensure adherence to international benchmarks for quality • Ensure equal access to resources for training, funding, and performance across race, gender, etc.	to development establish priorities for the national S&T agenda **Monitoring and Evaluating** • Promote transparency, objectivity and peer review and evaluation procedures in determining hot to award discretionary research funding **Governance and Regulation** • Articulate a national science agenda balanced between leveraging existing knowledge in the sciences and pursuing a few areas of national interest and comparative advantage. • Prepare for improved governmental regulatory capacity in areas concerning public health, public safety, and other areas relevant to S&T. • Prioritize metrology, standards and testing to ensure adherence to international benchmarks for quality, measurements, etc • Ensure equal access to resources for training, funding, and performance across race, gender, etc.
Policies for Increasing Access to ICTs	**Policies for ICT Access** • Extend access of available ICTs to a wider range of users **Policies for ICT Use** • Build out hard and soft infrastructures, including Internet and broadband networks • Provide support for the training and education of the	**Policies for ICT Access** • Extend access of available ICTs to a wider range of users **Policies for ICT Use** • Explore regional solutions to infrastructure creation (both hard and soft information infrastructures) • Provide support for the training and education of the	**Policies for ICT Access** • Extend access of available ICTs to a wider range of users • Build out infrastructure to extend coverage **Policies for ICT Use** • Improve regulatory framework to facilitate conducive environment for ICT growth • Provide support for the

	human capital base with respect to ICT use, including technical education for the next generation of ICT workers, such as network technicians, computer programrs, web developers and database managers • Educate entrepreneurs and government officials as to how to exploit ICTs so that they may take the lead in developing knowledge economies **Policies for ICT Research** • Support the use of ICTs as pedagogic and research-related tools • Provide incentives for ICT-related R&D • Pursue public-private partnerships in service delivery and research	human capital base with respect to ICT use, including technical education for the next generation of ICT workers, such as network technicians, computer programrs, web developers and database managers • Support the use of ICTs as pedagogic tools **Policies for ICT Research** • Pursue public-private partnerships in service delivery and research • Promote research into the efficiency and quality gains potentially achievable in core industries with additional application of ICT	training and education of the human capital base with respect to ICT use **Policies for ICT Research** • Scientifically lagging countries should generally soncern themselves less with ICT-related knowledge creation and more with the challenges related to the expansion of overage use and access

Source: IBRD 2002

Table 5.10: identification of factors contributing to the primary constraints to development of the Pacific region

ANNEX 2: Identification of Factors Contributing to the Primary Constraints to Development of the Pacific Region

Primary problem Development constraints	DETERIORATION IN LIVING CONDITIONS caused by: Economic stagnation preventing opportunities for improvement in the quality of life for the peoples of the Pacific Islands		
Social Infrastructure & Environmental Constraints (Level 3)	DECLINING HEALTH • Inadequate health facilities • Inadequate distribution of pharmaceuticals • Lifestyle diseases • Rapid population growth.	UNSUSTAINABLE FRESH WATER SUPPLY • Increasing human needs & other demands • Inadequate sanitation systems • Pollution	ENVIRONMENTAL DEGRADATION • Lack of awareness • Frequent disasters • Improper resource management • Inadequate waste disposal
Production Sector Constraints (Level 2)	LOW LAND RESOURCE PRODUCTIVITY • Difficult access • Small markets • Lack of fertile land • Pests • Diseases • Poor resource management • Resource depletion • Unscrupulous developers	LOW MARINE RESOURCE RETURNS • Lack of local involvement • Insufficient compliance by resource developers • Inadequate monitoring & surveillance • Unsustainable resource extraction	INADEQUATE PRIVATE SECTOR DEVELOPMENT • Lack of domestic savings • Lack of foreign capital • Limited investment opportunities • Limited access to regional & international markets • Non-capitalistic cultural attitudes • Inadequate marketing & promotion
Economic Infrastructure Constraints (Level 1)	HIGH TRANSPORTATION COSTS & INADEQUATE COMMUNICATIONS • Geographic isolation • Long distance to export markets • Lack of media options & service providers • Lack of information	DEPENDENCE ON HIGH COST ENERGY SOURCES • Inadequate national management capabilities • Inadequate performance of power utilities • Lack of rural energy services	
Lack of an Enabling Environment (Fundamental)	LACK OF AN ENABLING POLICY ENVIRONMENT • Poor governance • Institutional inadequacies • Lack of information & understanding of key economic development policy issues • Lack of capacity for policy analysis & planning • Lack of technical assistance & funding • Frequent natural disasters • Gender inequality	INADEQUATE SKILLS BASE • Inadequate basic education • Inadequate access to facilities • Poor/inappropriate curriculum • Lack of management, entrepreneurial & vocational/ technical training • Absence of long term strategic human resource development plans	

Source: Pacific Islands Forum Secretariat, pp9