

SCIENCE AND TECHNOLOGY HUMAN CAPACITY BUILDING IN DEVELOPING COUNTRIES: CHALLENGES AND OPPORTUNITIES FOR GUATEMALA, EL SALVADOR AND HONDURAS

–TRACK: SCIENTIFIC FORCE/DIVERSITY

Bonilla, Kleinsy; Serafim, Milena; Lugo, Iraima

Abstract: The present research studies the challenges and opportunities of three Central American countries: Guatemala, El Salvador and Honduras as they build their scientific workforce. Through qualitative methodology (including interviews and comprehensive surveys), the authors explore the perspective of key local actors from different sectors to highlight the possible role initiatives international cooperation can play. Key words [Scientific workforce; Central America, Developing Countries, STI Human Capacity Building]

INTRODUCTION

Developing countries face numerous challenges in of building their scientific and technological human capacity; particularly in relation to the training and accumulation of a specialized scientific workforce. In the case of countries such as Guatemala, El Salvador and Honduras the challenges are even greater, as more urgent problems dominate the public agenda. For example poverty, violence, inequality, precarious economic structures, and natural disasters, leave these countries with extremely limited resources to strengthen the scientific and research abilities of their human capital. Therefore the possibilities for the international community to play a helpful role might be significant in building S&T human capacity

RESEARCH QUESTIONS

1. What possible reasons explain the shortages of S&T human capital in Guatemala, El Salvador and Honduras?
2. What S&T human capacities should be a priority to be built in Guatemala, El Salvador and Honduras?
3. What support can the international community provide in the process of S&T human capacity building in Guatemala, El Salvador and Honduras?

ANALYTICAL FRAMEWORK

Different Levels of Capacity Building in S&T

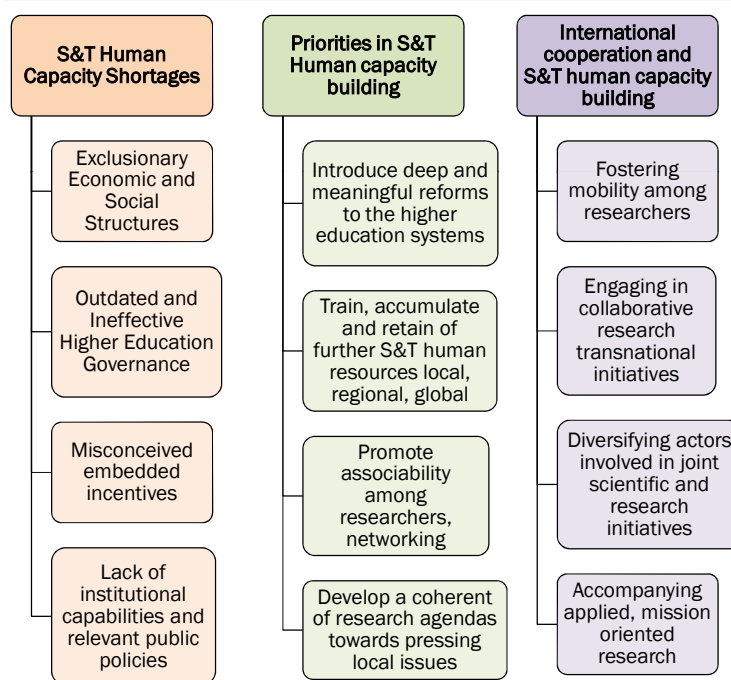
Level of S&T Capacity	Definition
S&T Human Capacity micro level	Involves the formation, accumulation and retention of S&T human resources (quantity and quality), and the relationships between these individuals
S&T Organization Capacity – meso level	Organization or entity, research center/institute, practices and resources
S&T Institutional Capacity – meso level	(broader and intangible) laws, policies, rules of the game, conditions, sectorial - enabling environment
S&T Social Capacity – macro level	Social system, the general context of the S&T, the overall context, society as a collective whole, the entire country

Source: modified from UNDP (1997) Capacity Development. Technical Advisory Paper 2, Management, Development and Governance Division, UNDP, New York and UNDP. Capacity assessment and development, in a systems and strategic management context. Technical Advisory Paper 3, UNDP, 1998

DATA SOURCES – KEY LOCAL ACTORS

Academic/Scientific Sector	Institutions/Public Organizations S&T
Universities – Higher Education Institutions Research Institutes Individual Senior Researchers Groups and Organized researchers Networks of Researchers Data Bases of local Researchers (national level)	Institutions or public organizations Relevant to S&T (explicit or implicit competencies) Administrative and Legislative Branch Public enterprises, public research institutes
Privado Sector (Industry)	International Cooperation in S&T
Companies, firms, enterprises relevant to industrial production familiar with R&D experiences Entities representing the Organized industrial private sector	International Organizations focusing on S&T cooperation from different mechanisms: bilateral, multilateral, development banks, international universities

RESULTS



CONCLUSIONS

- Critical importance of a national development plan (strategy);
- Fundamental necessity of national leadership;
- Crucial significance of the local context informing research efforts;
- Centrality of understanding that S&T capacity building initiatives require equal levels of commitment from actors in the developing countries as well as the involved actors from development countries.