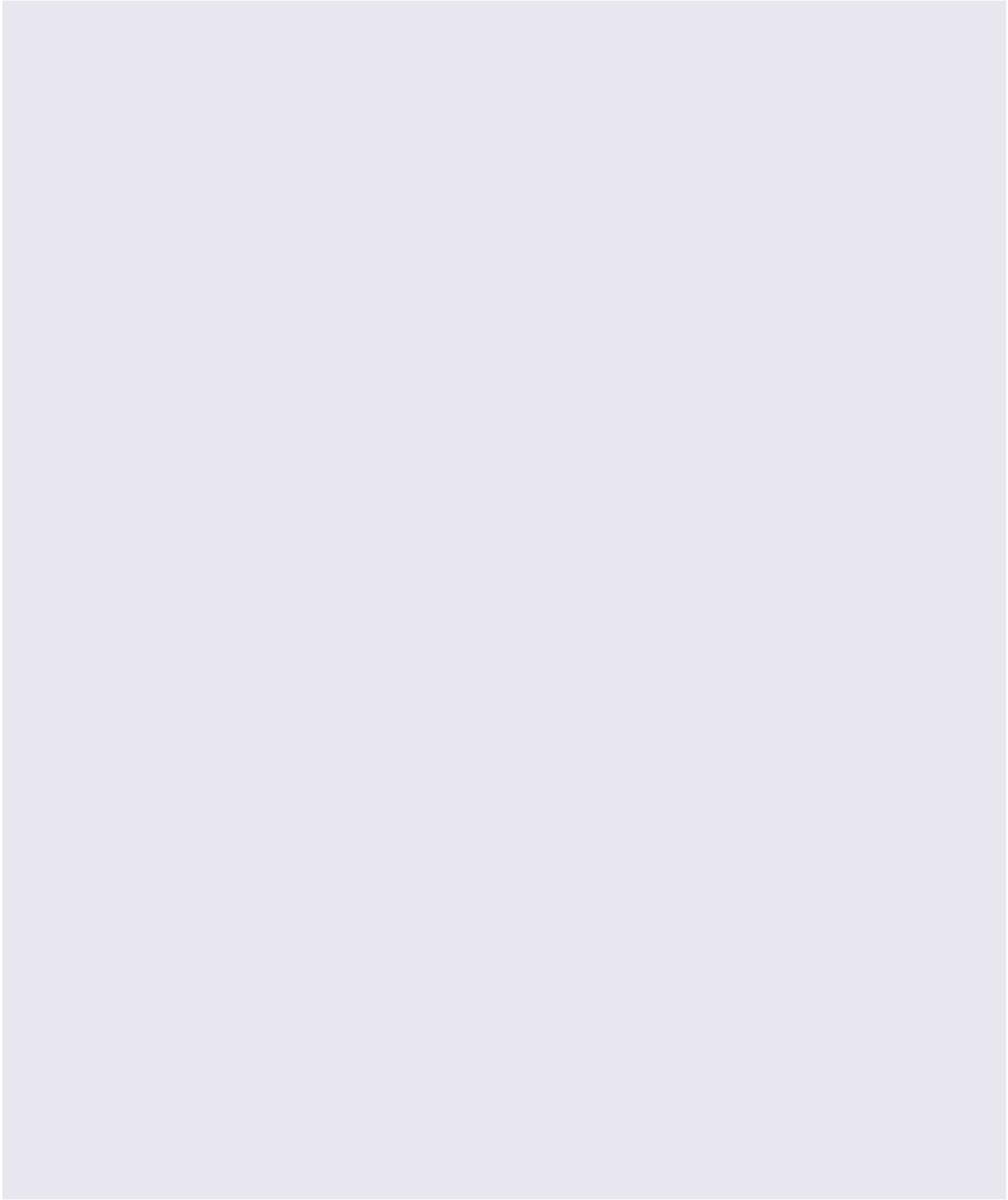


WORKSHOP ON 'TRANSFORMATIVE CHANGE AND THE THREE FRAMES OF INNOVATION POLICY'

8-10 JANUARY 2018,
MEXICO CITY, MEXICO

TRANSFORMATIVE CHANGE AND THE THREE FRAMES OF INNOVATION POLICY



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INTRODUCTION

Welcome to the Workshop on 'Transformative Change and the Three Frames of Innovation Policy', co-organised by the Science Policy Research Unit (SPRU) at the University of Sussex, the National Council of Science and Technology of Mexico (CONACYT), and the British Council with the support of the Newton Fund.

The Science Policy Research Unit (SPRU) at the University of Sussex in the United Kingdom is an internationally recognised leading Centre of Research on Science, Technology and Innovation (STI) management and Policy. In 2016, SPRU alongside agencies from Colombia; Finland; Norway; South Africa; and Sweden, founded the Transformative Innovation Policy Consortium (TIPC). The initiative aims to address global challenges through joint research between academics, policymakers, industry and civil society actors, through formulating a new way of framing and delivering innovation policy to promote long-term transformative change and innovation across different sectors, societies and structures.

Mexico, through CONACYT, has committed to joining the Consortium in 2018, and it is currently in the preparatory phase. This workshop is the first activity jointly organised by SPRU and CONACYT as part of this process. The goal of the workshop is two-fold: on the one hand, it delivers training and expertise about transformative innovation theory and practice; on the other hand, it aims to apply learning and map different types of policies and policy instruments.

During this workshop, participants will learn about the three frames for innovation policy research and development 1. Research and Development (R&D), 2. National Systems of Innovation (NSI) and 3. Transformative Change/Innovation. They will start to apply these to specific innovation policy initiatives in Mexico. Key concepts and tools from Sustainability Transitions theory including the Multi-Level Perspective (MLP) and Strategic Niche Management (SNM) will be unpacked to allow a deeper understanding of the nature of transformative change, the importance of experimentation and an opportunity to re-think the aims of innovation policy in direct relation to specific societal and grand challenges.

Having built up a strong base on the three framings, participants will learn about this in relation to two specific types of innovation that are relevant for Mexico: Inclusive Innovation and Grassroots Innovation. Through a combination of lectures and group exercises we apply the frameworks and tools to explore the potential of transformative change across several sectors (e.g. energy, agriculture, mobility) and levels of governance (e.g. global, national, regional, local).

Later, participants will apply their learning through a series of group exercises aimed at mapping different types of policies and policy instruments, research funding and other innovation activities, categorising according to the three frames. The exercise helps the participants and SPRU team to understand what already exists and whether there is existing Transformative Innovation Policies (TIP) or opportunities for TIP. The output from this exercise will be a map of the principal Science, Technology and Innovation (STI) institutions and programmes of Mexico, a table showing the distribution of STI programmes according to the three frames of innovation policy and geographical implementation, and an early indication of possible case studies for TIPC interests.

The expert team at SPRU who developed the workshop agenda have really enjoyed putting it together and are looking forward to a productive time working with all participants to share and discuss new ideas on developing innovation policy for transformative change. We hope you enjoy it as well, and welcome your participation and feedback throughout the workshop and beyond.

OBJECTIVES

Governments, funding bodies and international organisations across the world increasingly want science, technology and innovation to address societal or grand challenges such as access to food and energy, rising inequality, inclusion, and climate change. However, it is far from clear how to design, implement or govern challenge-led innovation policies. The challenges require re-thinking our conventional approaches to Science Technology and Innovation (STI) policies. There is therefore a need to develop new, more effective policies, and instruments for innovation.

This three-day workshop aims to engage with leading policymakers, academics and other key STI actors to provide a platform to:

1

DISCUSS

Discuss the different frames of STI Policy in the context of a world in transition

2

CONSIDER

Consider the relevance of TIPC to current STI policy challenges in Mexico at the national and regional level

3

PROVIDE

Provide key concepts and tools on Transformative Innovation Policy (TIP), as a new way of thinking about new challenges and opportunities

4

APPLY

Apply the three frames to current STI policies and initiatives to identify potential areas for transformative change in Mexico, through a process of knowledge co-creation

DAY ONE

TIME	ACTIVITY	OBJECTIVES	SPEAKER
DAY ONE - MONDAY 8 JANUARY 2018			
9.00 – 9.30	Registration of participants		
9.30 – 10.00	Welcome by CONACYT, SPRU, the British Council and the Newton Fund <ul style="list-style-type: none"> • Overview of the workshop • Initial Survey to participants (M&E of the workshop) 		José Antonio Lazcano Ponce (Technological Development and Innovation Deputy Director, CONACYT), José Franco (General Coordinator, FCCYT) Kevin Mackenzie (Country Director, British Council), HMA Duncan Taylor, on behalf of Newton Funds, Johan Schot (Director, SPRU)
10.00 – 10.45	Lecture: The Three Frames of Innovation Policy	<ul style="list-style-type: none"> • Introducing innovation policy in the context of a world in transition. • Understanding the characteristics of each frame, how they complement and question each other. 	Johan Schot
10.45 – 11.15	Q&A session		
11.15 – 11.30	Break		
11.30 – 12.45	Group work: Three frames of innovation, policy initiatives, and instruments	<ul style="list-style-type: none"> • To what extent are the frameworks complementary or conflicting? Can they be combined in principle? • Pros and cons of each frame • Identifying innovation policy initiatives that match the three frames 	Team
12.45 – 13.30	Group presentations		
13.30 – 14.30	Lunch		
14.30 – 15.00	Lecture: Transformative Change using the Multi-Level Perspective	<ul style="list-style-type: none"> • Rethinking the role of innovation policy in relation to societal challenges • Understanding the nature of Transformative Change through the lens of the Multi-Level Perspective • Introducing Strategic Niche Management as a tool for Innovation Policy for Transformative Change • Understanding importance and process of experimentation and opening up for Transformative Change • Evaluating transformative change 	Johan Schot
15.00 – 15.30	Q&A session		
15.30 – 16.30	Group work: Critical challenges, technology niches, and transformative change	<ul style="list-style-type: none"> • What are the critical challenges in Mexico today? • What are potential technology niches for transformative change emerging in Mexico? • How might transformative innovation policy address these challenges? 	Sandro Giachi Valeria Garcia Lara
16.30 – 16.45	Break		
16.45 – 17.15	Results of the group work and discussion		
17.15 – 18.00	Lecture: The importance of transformative change for regions	<ul style="list-style-type: none"> • Applying transformation thinking to regional innovation • Regional policies for transformative change 	Matias Ramirez
18.00 – 18.15	Q&A session		
18.15 – 18.30	Closing session		Teresa de León Zamora Johan Schot

DAY TWO




TIME	ACTIVITY	OBJECTIVES	SPEAKER
DAY TWO – TUESDAY 9 JANUARY 2018			
9.00 – 9.30	Registration of participants		
9.30 – 10.00	Overview of the second day Reflections on the first day		Johan Schot
10.00 – 10.45	Lecture: Inclusive innovation: Principles and concepts	<ul style="list-style-type: none"> • Using STI to help solve problems of marginalised and poor • Understanding social innovation, pro-poor innovation, frugal innovation, inclusivity and participation 	Matias Ramirez
10.45 – 11.15	Q&A session		
11.15 – 11.30	Break		
11.30 – 12.15	Lecture: Inclusive innovation policies through different STI policy frames	<ul style="list-style-type: none"> • Understanding the definitions and scope of Inclusive innovation through the 3 frames • Discussing examples of inclusive innovation through different policy frames 	Matias Ramirez
12.15 – 12.30	Q&A session		
12.30 – 13.30	Group work: How can STI policies be inclusive, sustainable and transformative in areas such as health and education as well as agriculture, energy, mobility?	<ul style="list-style-type: none"> • Would niches play an important role? Do these exist and how to encourage finding them? • Do networks of civil society exist and how to work with them? • How could public policy and public policy actors facilitate inclusive transformational processes? • Can 'intermediaries' help? 	Matias Ramirez
13.30 – 14.30	Lunch		
14.30 – 15.15	Group Presentations		
15.15 – 16.00	Lecture: Grassroots and community energy	<ul style="list-style-type: none"> • Introduction to grassroots innovation • Understanding how grassroots action can nurture and promote new innovations that address societal challenges • Practical examples of local action in the domain of community energy 	Mari Martiskainen
16.00 – 16.30	Q&A session		
16.30 – 16.45	Break		
16.45 – 17.45	Group work: Potential for grassroots innovation in the context of Mexico	<ul style="list-style-type: none"> • Are there good examples of grassroots innovations in Mexico and can we learn from them? • What areas of specific issues could be addressed through grassroots action? • How do current policies fit with grassroots action? E.g. are their policies that could potentially support or hinder grassroots innovation? 	Mari Martiskainen Valeria Garcia Lara
17.45 – 18.15	Group Presentations		
18.15 – 18.30	Closing session		Johan Schot

DAY THREE

TIME	ACTIVITY	OBJECTIVES	SPEAKER
DAY THREE - WEDNESDAY 10 JANUARY 2018			
9.00 – 9.30	Registration of participants		
9.30 – 10.00	Introduction to the mapping workshop		Matias Ramirez
10.00 – 11.15	Group work: Mapping STI policies in Mexico	<ul style="list-style-type: none"> • Mapping principal STI institutions and programs in Mexico following the three frames of innovation • Identifying potential areas for STI policy development in Mexico according to a transformative change perspective 	Sandro Giachi Valeria Garcia Lara
11.15 – 11.30	Break		
11.30 – 12.15	Results of group work and discussion		
12.15 – 12.45	Case studies for transformative change	<ul style="list-style-type: none"> • Brief review of case studies identified by TIPC in other countries 	Johan Schot Matias Ramirez
12.45 – 13.30	Group work: Looking for transformative change in Mexico	<ul style="list-style-type: none"> • Identifying policies and initiatives for transformative change in Mexico • Early indication of possible case studies 	Team
13.30 – 14.30	Lunch		
14.30 – 15.00	Results of group work and discussion		
15.00 – 15.30	Final Survey to participants (M&E of the workshop) Wrap up session: more challenging questions or applied cases for further analysis Closing remarks		Matias Ramirez

THREE FRAMES: A COMPARISON

Input provided by: Johan Schot (SPRU), Ed Steinmueller (SPRU),
Laur Kanger (SPRU), Tuomo Alasoini (Tekes)
This table allows you to grasp easily the distinctiveness of each frame.

<p>FRAME 1: R&D</p> 	<p>FRAME 2: SYSTEMS (A) AND ENTREPRENEURSHIP (B)</p> 	<p>FRAME 3: TRANSFORMATIVE CHANGE</p> 
<p>TIME OF DOMINANCE</p>		
<p>1960s-1980s</p>	<p>1980s to today</p>	<p>Emerging</p>
<p>MAIN GEOGRAPHICAL FOCUS</p>		
<p>National</p>	<p>National and regional systems of innovation intersecting with sectoral and technological innovation systems (a)/ National with particular attention to “centres of excellence” or “clusters” of innovative activity (b)</p>	<p>Multi-scalar: focus on grand challenges that extend to multiple scales exceeding geographical, sectoral, technological and disciplinary boundaries</p>
<p>FOCAL ACTORS</p>		
<p>Government, scientists and industry actors with a tendency to prioritise large firms</p>	<p>Interlinked configurations of government, science and industry actors with particular attention to the role and missions of universities (a)/ enterprises, markets and the government with a particular focus on New Technology-Based Firms and start-up culture (b)</p>	<p>Government, science, industry, civil society, end-users and non-users (as potentially affected parties and contributors to the innovation processes)</p>

FRAME 1:
R&D



FRAME 2:
SYSTEMS (A) AND
ENTREPRENEURSHIP (B)



FRAME 3:
TRANSFORMATIVE
CHANGE



JUSTIFICATION FOR POLICY INTERVENTION

Fixing market failures: industries fail to conduct basic scientific research that is not fully appropriable or conduct less of this research than socially desirable

Fixing structural system failures: increase in R&D spending does not automatically lead to high performance in terms of innovative activities

Fixing transformational system failures: R&D, innovation systems and commercialisation do not necessarily lead to solving important social and environmental problems

MAIN STRATEGY

Knowledge generation: provide support for basic and applied science

Knowledge utilisation: boost absorptive capacity; increase system performance by creating of links between actors and facilitating mutual learning (a)/ promote entrepreneurship and facilitate the creation of markets for innovative goods and services (b)

Solving social and environmental challenges: tilt the regulative playing field on the global level and provide more space for experimentation with niche solutions on the local level, enabling socio-technical systems change

NATURE OF CRITICAL KNOWLEDGE

Appropriate and transferable: easy to adopt, apply and utilise without protective measures

Sticky and situated: utilisation requires proximity, absorptive capacity and interactive learning

Emergent and co-produced: generated through dialogue between multiple actors as part of a collective search process

FOCAL AREAS

High technology: stress on the creation of radical novelty

Radical and incremental product and process innovations: stress on significant price/performance improvements through successive incremental innovations

Socio-technical systems: stress on fundamental transformation of system architecture, changing both its components and its directionality of development

FRAME 1:
R&D



FRAME 2:
SYSTEMS (A) AND
ENTREPRENEURSHIP (B)



FRAME 3:
TRANSFORMATIVE
CHANGE



TYPICAL POLICY ACTIVITIES

- R&D stimulation (subsidies, tax credits, procurement, mission-oriented programmes)
- Building the Intellectual Property Rights regime
- Education policy with emphasis on Science, Technology, Engineering and Math (STEM) subjects
- Science communication to explain the importance of STEM to wider public
- Foresight to select focus areas, regulation and technology assessment to manage negative impacts

- Constructing links between actors (building platforms, networks, databases) and organising technology transfer
- Stimulation of learning-by-doing, learning-by-using, learning-by-interacting
- Use of demand stimuli (e.g. procurement) to enhance and accelerate market development
- Building regional and national systems of innovation by assessing capabilities gaps and technological opportunities, implementing policies to address them
- Enhancing skill development based on proactive analysis of skill gaps and shortfalls
- Programs to stimulate entrepreneurship and incubators (including indoctrination in the social value of entrepreneurship)
- Improving business conditions for Small and Medium-Sized Enterprises and start-ups
- Addressing the nature of equity markets (mezzanine level finance, IPO, inclusion in exchanges), especially angel and venture capital markets

- Stimulation of experimentation with niche technologies, scale-up and acceleration of socio-technical transitions (e.g. Strategic Niche Management, innovation intermediaries, Transition Management)
- New institutional solutions for changing the directionality of existing R&D and innovation activities (e.g. technology forcing, Responsible Research and Innovation, policy mixes for stimulating niches and destabilizing existing systems)
- Promoting social, inclusive, frugal and pro-poor innovation
- Bridging science/engineering, social sciences and humanities in the education system

UNDERLYING MODEL OF INNOVATION

Linear model: invention (discovery) leads to innovation (commercialisation) leads to diffusion (adoption)

Interactive and system-bound: chain-linked model stressing feedback loops between invention, innovation and use; evolutionary model, stressing ongoing interactions between actors, networks and institutions (a)/demand-pull model – needs of organisations and individual consumers largely drive innovative activities (b)

Systemic and experimental: quasi-evolutionary model including non-random (purposeful) variation, selection and retention, stress on feedback loops between invention, innovation and use, and ongoing interactions between actors, networks, institutions and technologies

FRAME 1:
R&D



FRAME 2:
SYSTEMS (A) AND
ENTREPRENEURSHIP (B)



FRAME 3:
TRANSFORMATIVE
CHANGE



BASIC ASSUMPTIONS ABOUT INNOVATION

- Division of labour: clear division of labour – government provides, science discovers, industry applies and consumer adapts; increase in R&D will automatically translate into more innovation
- Conflict vs. consensus: most often embedded in a military-industrial complex that takes defence needs as forerunners and large industries as the “natural” intermediary to translate scientific advances into commercial application; open conflict with new firms and industries that are not part of the club
- Technological and social progress: the link between the two is largely uncontested

- Division of labour: multiple closely interacting actors with different but partially overlapping roles contributing to the overall performance of the system (a)/ clear division of labour – the task of the government is to facilitate the operation of existing markets and to create markets where they do not yet exist; left to themselves markets provide novel products and services at optimum quantity and price (b)
- Conflict vs. consensus: evolutionary in rhetoric but functionalist in practice, emphasis on cooperation between various actors, leading to the fulfilment of system functions (a)/ tends to be conflict-oriented, mainly stressing international competitiveness of states and competition between enterprises (b)
- Technological and social progress: the link between the two is largely uncontested

- Division of labour: blurred boundaries, multiple actors crossing various domains and enacting overlapping roles, resulting in the co-production of science, technology and society
- Conflict vs. consensus: mix of competition and cooperation is required to achieve disruptive socio-technical systems change
- Technological and social progress: non-neutrality of technology, specific technological designs and the directionality of innovative activities might serve to create, solidify or amplify environmental and social problems

BASIC ASSUMPTIONS ABOUT OUTCOMES

- Dealing with consequences: new technologies are associated with high degree of uncertainty and unpredictability making it virtually impossible to address major environmental and social impacts proactively
- Causality: stress on innovation as a motor of economic growth leads to public welfare as a bonus

- Dealing with consequences: largely reactive, major environmental and social impacts are usually addressed after they have occurred, sometimes with a particular emphasis on the provision of adequate market stimuli (b)
- Causality: stress on innovation as a motor of economic growth and increased competitiveness leads to public welfare as a bonus

- Dealing with consequences: proactive, stress on anticipating alternative futures associated with certain technological choices
- Causality: stress on innovation as means for directly addressing environmental and social challenges leads to economic growth and increased competitiveness as a bonus

FRAME 1:
R&D



FRAME 2:
SYSTEMS (A) AND
ENTREPRENEURSHIP (B)



FRAME 3:
TRANSFORMATIVE
CHANGE



MAIN HAZARDS

- Government failure: insufficient funding for basic R&D
- Market failure: negative externalities that require regulation

- System failure: innovation system fails to perform as a synergistic whole and to enhance innovative activities (a)
- Government failure: too many state restrictions on business activities (b)
- Market failure: regulatory need to deal with negative externalities in a way that would not stifle entrepreneurship (b)

- Transformative failure: failure to induce fundamental transformation to socio-technical systems forming the backbone of modern societies
- Societal and environmental needs failure: failure to solve extra-economic and collective problems on multiple scales

PARALLEL COUNTER-NARRATIVES

- Appropriate Technology movement, focus on small-scale solutions

- Politics and democratisation of Science and Technology
- Inclusive and interactive

- Technological fix: strong state intervention with massive investment in Big Technologies which promise to solve large social and economic issues

RECOMMENDED READINGS

With the aim of providing participants with a broader and deeper understanding of the workshop content, we have included a list of suggested readings. We strongly recommend participants read the material beforehand, and reflect in relation to the workshop content and the context of Mexico.

THREE FRAMES OF INNOVATION AND TRANSFORMATIVE CHANGE

- Schot, J.W. and Steinmueller E. (2017), Framing Innovation Policy for Transformative Change: Innovation Policy 3.0. SPRU Science Policy Research Unit, University of Sussex: Brighton, UK. <http://www.johanschot.com/publications/framing-innovation-policy/>
- Schot, J, and Geels, F.W. (2008) Strategic niche management and sustainable innovation journeys: theory, findings, research agenda, and policy. *Technology Analysis and Strategic Management*, 20(5), 537-554
- Geels, F.W. (2004) From sectoral systems of innovation to sociotechnical systems Insights about dynamics and change from sociology and institutional theory, *Research Policy*, 33, 897–920.
- Geels, F.W., and Schot, J. (2007). Typology of sociotechnical transition pathways, *Research Policy*, 36, Issue 3, 399-417, ISSN 0048-7333,

REGIONAL INNOVATION

- Coenen, L., Hansen, T, and Rekers, J.V (2015), Innovation Policy for Grand Challenges. An Economic Geography Perspective, *Geography Compass*, 9(9), 483-496.
- Boschma, R., Coenen, L., Frenken, K., and Truffer, B. (2017), Towards a theory of regional diversification: combining insights from Evolutionary Economic Geography and Transition Studies, *Regional Studies*, 51(1), 31-45.
- Hansen, T., & Coenen, L. (2015). The Geography of Sustainability Transitions: Review, Synthesis and Reflections on an Emergent Research Field *The Geography of Sustainability Transitions: Review, Synthesis and Reflections on an Emergent*, 17, 92–109. <https://doi.org/10.1016/j.eist.2014.11.001>

INCLUSION

- Marcel Fauchamps (2006) Development and social capital, *The Journal of Development Studies*, 42(7), 1180-1198, DOI: 10.1080/00220380600884126
- Sutz, J. and Tomasini, C., (2013) “Knowledge, innovation, social inclusion and their elusive articulation: when isolated policies are not enough”. In International workshop on new models of innovation for development, University of Manchester (Vol. 4, No. 5). July.
- Chataway, J., Hanlin, R., and Kaplinsky, R. (2014). Inclusive innovation: an architecture for policy development. *Innovation and Development*, 4(1), 33-54.
- Ramírez, M. (2017). Innovación inclusiva, desarrollo de capacidades y redes sociales en clústeres emergentes. *Revista Palmas*, 37, 151-158.

GRASSROOTS INNOVATION AND COMMUNITY ENERGY

- Martiskainen, M. (2017). The role of community leadership in the development of grassroots innovations. *Environmental Innovation and Societal Transitions*, 22, 78-89.
- Smith, A., Hargreaves, T., Hielscher, S., Martiskainen, M., and Seyfang, G. (2016). Making the most of community energies: Three perspectives on grassroots innovation. *Environment and Planning A*, 48(2), 407-432.
- Martiskainen, M., Heiskanen, E., and Speciale, G. (2017). Community energy initiatives to alleviate fuel poverty: the material politics of Energy Cafés. *Local Environment*, 23(1), 20-35.
- Martiskainen, M., Speciale, G., and Bird, J. (2017). Alleviating fuel poverty: the role of the energy café. Fuel Bill Drop Shop project. Policy Briefing no. 6.

LECTURERS AND SPRU TEAM



JOHAN SCHOT

Professor Johan Schot is Director at the internationally renowned Science Policy Research Unit (SPRU) at the University of Sussex.

As a Professor in History of Technology and Sustainability Transitions Studies, Schot's interests orientate around action – driven research that focuses on integrating disciplines and providing the historical perspective for increased knowledge to support positive societal change. He is the author of many influential publications including *Transitions towards Sustainable Development. New Directions In The Study Of Long Term Transformative Change* (Grin, Rotman & Schot) and *Writing The Rules For Europe: Experts, Cartels And International Organisations* (Schot & Kaiser) Currently, his research directions span three areas. Firstly, he is fronting, along with colleagues at SPRU, the transition to transformative innovation policy. This centres on examining how governments, and other actors, can create policies that enable innovations that transform our current idea of progress to address the issues of our 'world in transition' – climate degradation, security, migration amongst others.

He is the founder of the Transformative Innovation Policy Consortium (TIPC – www.transformative-innovation-policy.net). Policymakers and researchers, internationally, have the opportunity to move beyond current frameworks and models, to create a new thinking for innovation that could transform our approach to growth so that neither the environment, economy nor humanity are harmed further. This area also includes an exploration of the world in transition through the notion of 'Second Deep Transition'.

The second research area demonstrates the vital role users of technologies play in evolving them to a dominant position in society. The third arena of interest is with the International Panel on Social Progress, (IPSS – www.ipsp.org) where Schot examines the role of science and technology in developing a new agenda on social progress for the 21st century. Working papers and more information is available at www.johanschot.com and www.transformative-innovation-policy.net. Follow on Twitter – [@Johan_Schot](https://twitter.com/Johan_Schot)

Schot is a member of the Royal Netherlands Academy of Arts and Sciences (KNAW) elected for his achievements in interdisciplinary work. In 2002 he was awarded a VICI grant by the Netherlands Organization for Scientific Research (NWO). In 2015 he was awarded the Leonardo da Vinci Medal for his outstanding contributions to the history of technology. He won distinguished the Freeman Award 2014 for the Making Europe series.



MATIAS RAMIREZ

PhD (2002), University of Manchester and B.Sc. Economics, (1997), University College London.

Dr Ramirez has undertaken research on topics related to the study of knowledge, innovation, networks and transformative innovation policy. Dr Ramirez is involved in the Latin American arm of the Transformative Innovation Policy Consortium (TIPC) project that brings together national policy makers from a range of countries interested in transformations in Science, Technology and Innovation. Other research has included studies of inclusive innovation in agribusiness clusters that include case studies of the palm oil clusters in Colombia, mango cluster in Peru and berry producers in innovation in Southern Chile. Prior to this Dr Ramirez led an ESRC funded project looking into the networks of knowledge workers in China's largest high technology park in Beijing. He has published in a range of Economics, Geography and Management journals. These include the British Journal of Industrial Relations, Industry and Innovation, International Journal of Innovation Management, Service Industries Journal, New Technology Work and Employment, Regional Studies, Environment and Planning C and the International Journal of Human Resource Management.



MARI MARTISKAINEN

PhD in Science and Technology Policy Studies, University of Sussex (2010-2014), MSc in Environmental Technology, Imperial College London (2002-2003), and BA in Social Sciences, University of Helsinki, Finland (1997-2000).

Dr Mari Martiskainen is a Research Fellow at the Centre on Innovation and Energy Demand, based at Science Policy Research Unit (SPRU), University of Sussex. Dr Martiskainen is member of the Sussex Energy Group, also based at SPRU. She is also an affiliate Researcher of the Tyndall Centre for Climate Change Research.

Dr Mari Martiskainen is a social scientist with a specific interest in the transition to a more fair, clean and sustainable energy world. Her research centres around energy policy, with specific focus on the issues of developing low energy housing, addressing energy poverty and promoting renewable energy. Dr Martiskainen has worked with a range of conceptual approaches, including sustainability transitions, innovation intermediation, user innovation, power and politics. Dr Martiskainen has authored several articles in journals such as Energy Research & Social Science, Environmental Innovation and Societal Transitions and Environment and Planning A. She has written book chapters, conference proceedings and invited blog posts. She is a reviewer for several international journals, including Energy Research and Social Science, Energy Policy and Journal of European Social Policy. Dr Martiskainen presents her research regularly to a range of audiences, including international conferences.

Dr Martiskainen has worked with a range of stakeholders and partners, including community groups, not-for-profit organisations, businesses and consultants. She has experience from various communication channels, ranging from TV and radio to social, print and online media.

Prior to joining the University of Sussex, Dr Martiskainen worked for Renewable UK (formerly the British Wind Energy Association), concentrating on small-scale wind energy systems and engaging widely with industry and stakeholders. Her previous experience includes a post as an Editor at www.bunkerworld.com, where she conducted research in the global marine fuels sector and sustainable shipping fuels.



SANDRO GIACHI

PhD in Sociology, University of Malaga (2012-2016),
Msc. in Methodology of Social Sciences (2008-2010)
and Bsc.in Statistics (2004-2008),
the University of Florence.

Dr Sandro Giachi is a research fellow in transformative innovation policy at the Science Policy Research Unit (SPRU), University of Sussex, where much of his work is with the Transformative Innovation Policy Consortium (TIPC). His current research focuses on Latin American research and innovation policies and systems, and their potential for transformative change across different levels of governance. His previous research spanned across several topics, ranging from the sociology of innovation to the institutionalisation of science-industry relations.

He is also a member of the Research Committee on Knowledge, Science and Technology (CI-23) of the Spanish Federation of Sociology (FES), as well as a member of the Executive Committee of the Southern European Society Research Network (RN27) of the European Sociological Association (ESA).

He has been a pre-doctoral research fellow at the Spanish National Research Council (CSIC), a visiting researcher at the University of Wollongong (Australia) and the North Carolina State University (USA), and a freelance data analyst and consultant in the management of informal and local systems of production, the evaluation and planning of regional policies, and the evaluation of university teaching and services.



VALERIA GARCIA LARA

Valeria Garcia holds a B.A. in International Relations from the Tecnológico de Monterrey in Mexico and a MSc. in Energy Policy from the University of Sussex in the United Kingdom.

Valeria Garcia Lara is interested in the governance of transitions to sustainability, specifically in the energy sector, as well as in innovation policy, energy and climate finance. Her research explored the energy transition of the electricity system in Mexico and investment in renewable energy, using a socio-technical framework and a political economy perspective.

She currently works as a Research Assistant for the Transformative Innovation Policy Consortium (TIPC) as part of the Latin America team, where she undertakes research on Science, Technology and Innovation systems of Mexico, as well as transformative innovation and its link with the Sustainable Development Goals. Along with the rest of the Mexico team, she coordinates the inception phase of the TIPC project in Mexico.

Prior to joining the Consortium, Valeria worked as a Planning and Management Specialist of Climate Change Strategies for the United Nations Development Programme and the Ministry of Environment and Natural Resources of Mexico within the Commission for Protected Areas. In this role, she coordinated diverse national and international cooperation projects and initiatives related to climate change adaptation and mitigation. She also has experience in capacity building training, development of case studies, and methodological tools. She has also supported the Commission's work within the Inter-Ministerial Commission of Climate Change and other climate change policies.



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SCIENCE POLICY
RESEARCH UNIT

This course was developed and delivered by faculty
from the Science Policy Research Unit at the University of Sussex