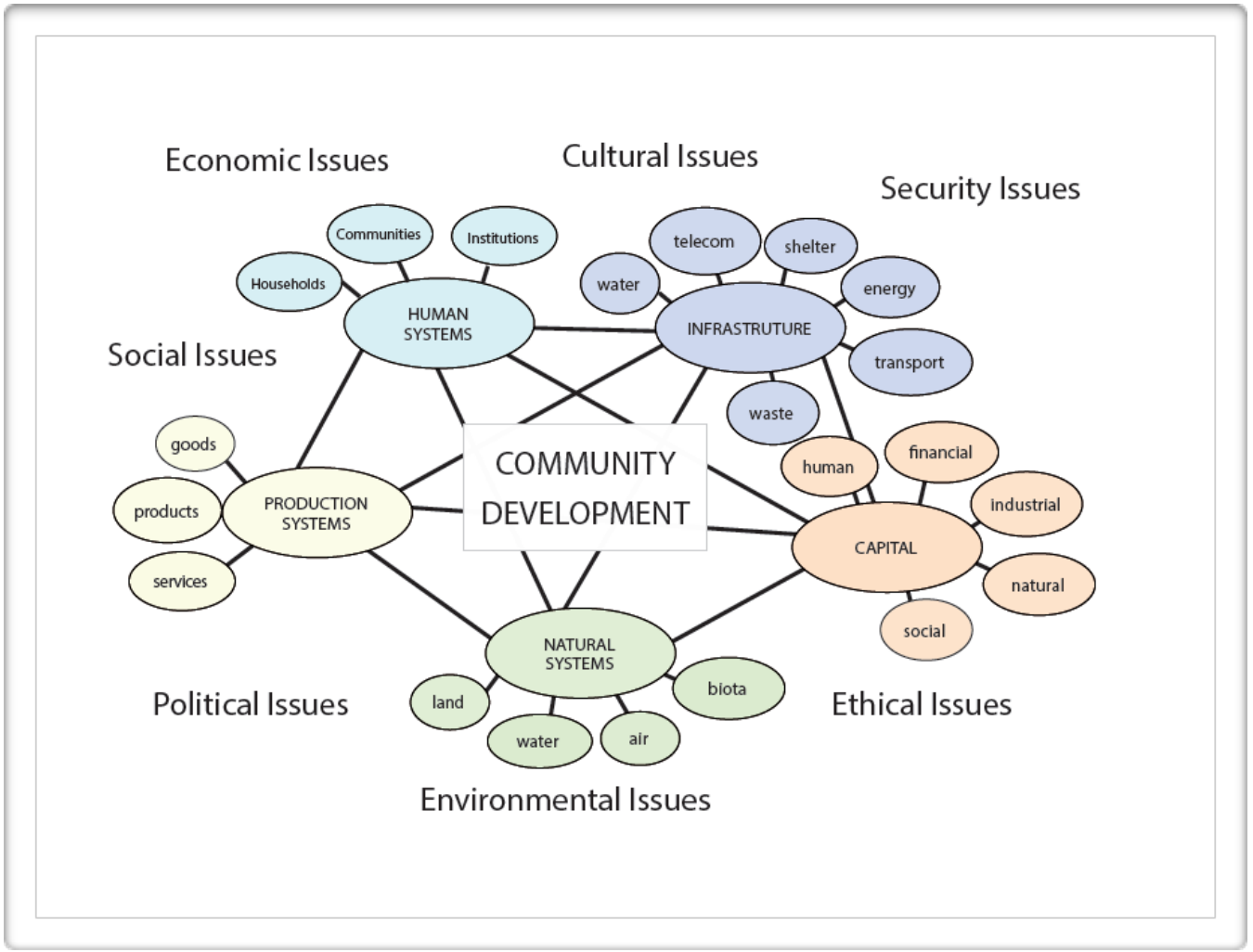
ENERGI AKADEMIET

Creating Healthy, Stable, Equitable, Safe, Prosperous Sustainable Communities


Economic Issues
Cultural Issues
Security Issues
Social Issues
Political Issues
Ethical Issues
Environmental Issues
COMMUNITY DEVELOPMENT
HUMAN SYSTEMS
Communities
Institutions
Households
INFRASTRUTURE
telecom
shelter
water
energy
transport
waste
PRODUCTION SYSTEMS
goods
products
services
CAPITAL
human
financial
industrial
natural
social
NATURAL SYSTEMS
land
water
air
biota

Community as Open, Complex & Adaptive Systems

- Consist of components that all interact in complex and uncertain ways;
- Consist of interacting units called households;
- Interact with other communities at the local, regional, or global scale;
- Manifest all the attributes of complex dynamic systems , e.g. non-linearity, emergence, uncertainty and synergy where the behavior of the whole can be quite different from that of its components;
- Possess capacity (strength), resources, assets (capital), and knowledge;
- Show spirit, engagement, cohesion, and collective action (social capital);
- Have household security needs and are vulnerable to a variety of hazard events ranging from every-day issues to large disaster events

Governments

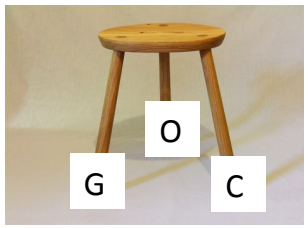
Top-Down

Development Projects

Outsiders:
NGOs,
Industry,
Professional
Organizations,
etc.

Bottom-Up

Community



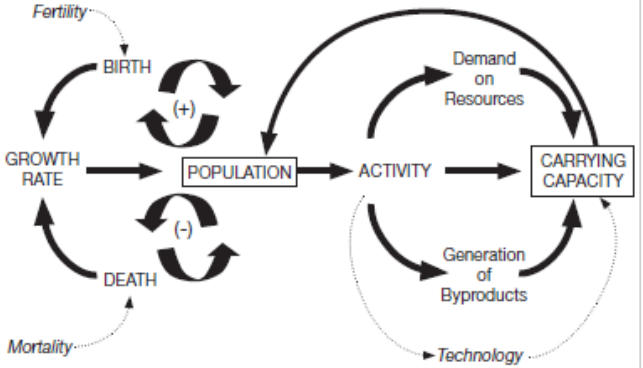
Community Development as Transformation

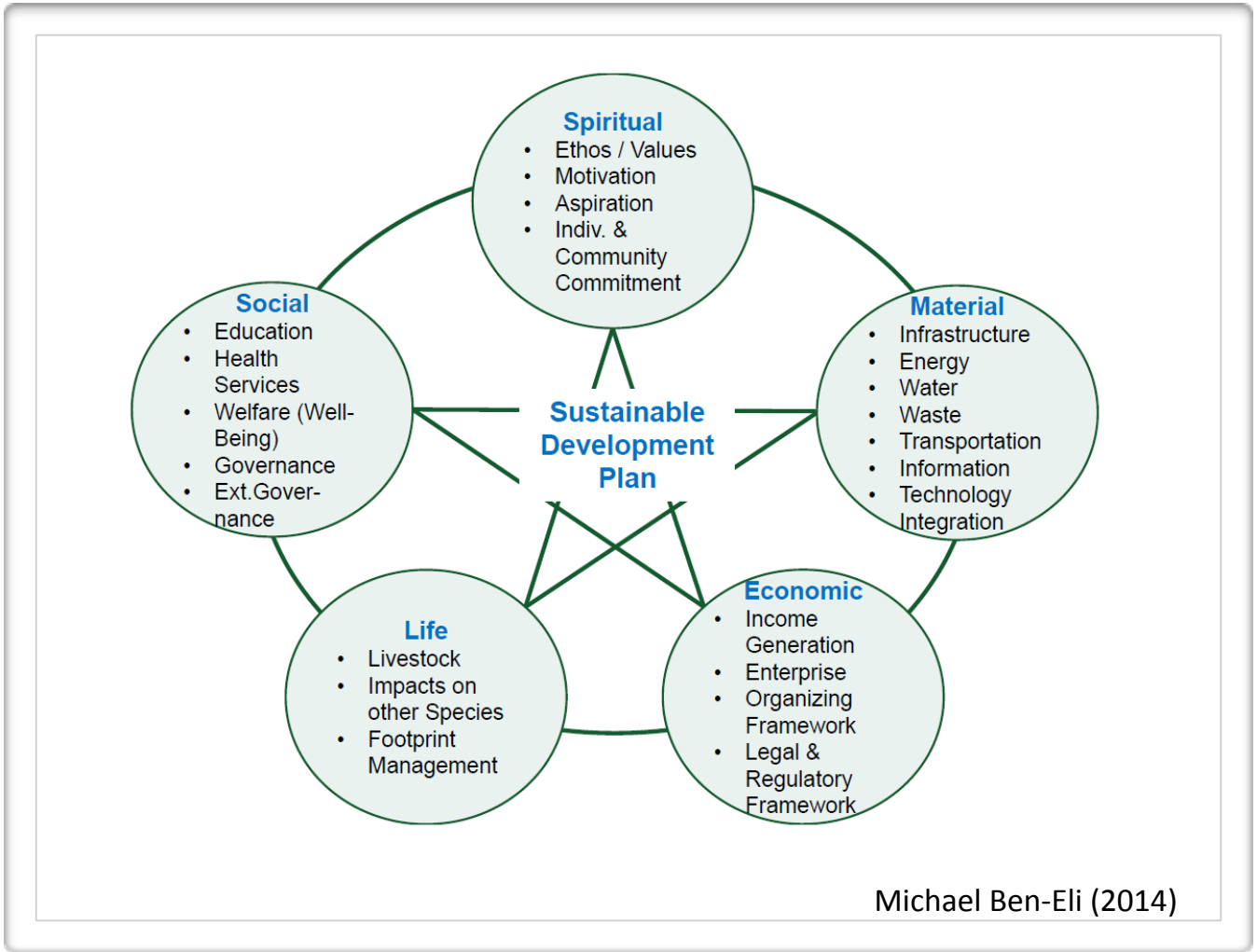
- *Change* in a complex, uncertain, open, adaptive and dynamic multi-disciplinary environment;
- *Participation* and *integration* of various disciplines and stakeholders;
- *Empowerment*, i.e. having beneficiaries sit in the driver's seat and define what development is and is not for them;
- *Justice*, *equity*, *equality* (social power, income, wealth, opportunity) and protecting human rights;
- *Freedom* to find meaningful solutions;
- *Finding common ground* between bottom-up and top-down approaches; and
- *Strategies* that empower not only the community but also the individual, the private sector, the state, and the household.

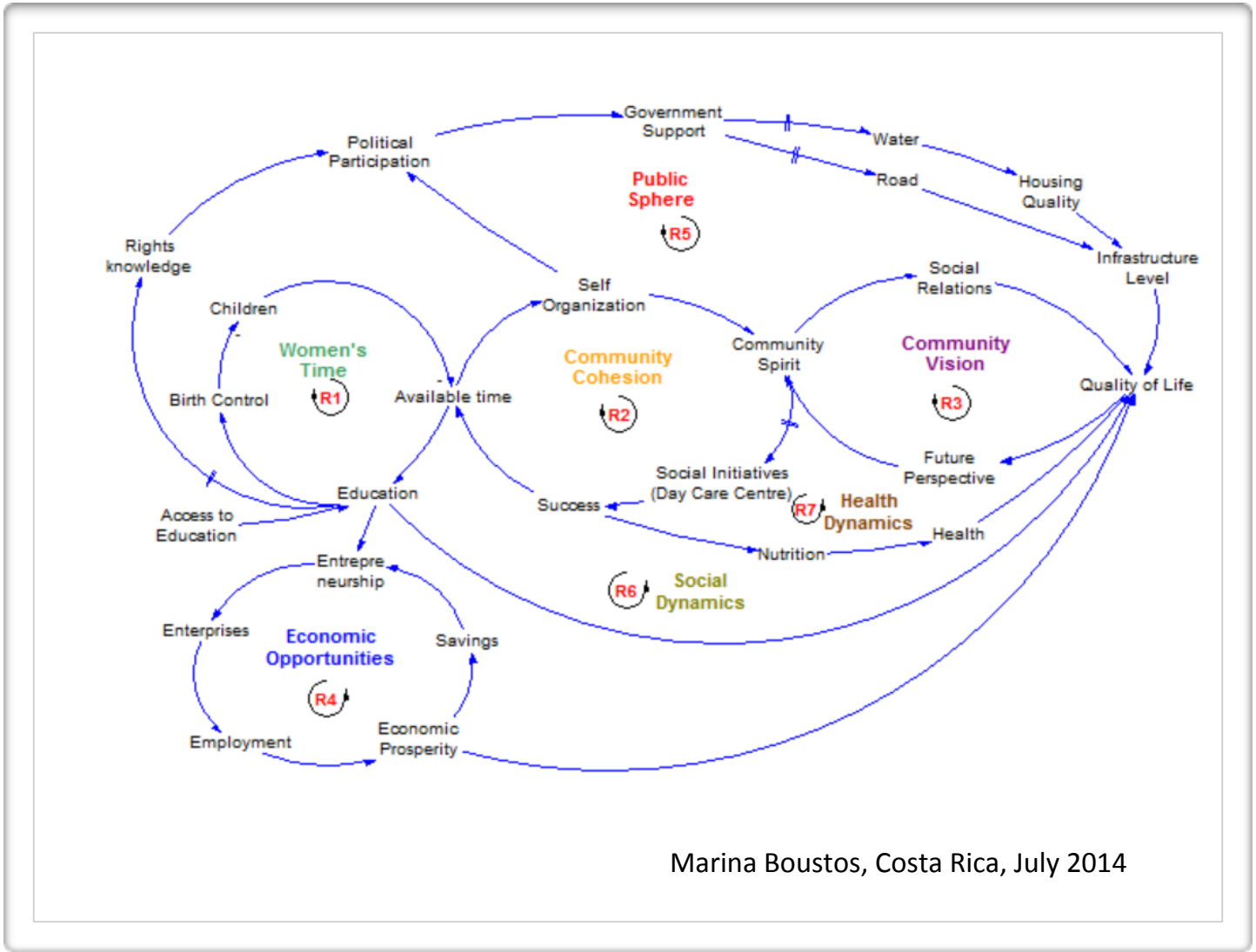
Sustainability

"A dynamic equilibrium in the processes of interaction between a population and the carrying capacity of an environment such that the population develops to express its full potential without adversely and irreversibly affecting the carrying capacity of the environment upon which it depends."

Michael Ben-Eli (2011)




Spiritual
• Ethos / Values
• Motivation
• Aspiration
• Indiv. & Community Commitment
Social
• Education
• Health Services
• Welfare (Well-Being)
• Governance
• Ext.Gover-nance
Material
• Infrastructure
• Energy
• Water
• Waste
• Transportation
• Information
• Technology Integration
Sustainable Development Plan
Life
• Livestock
• Impacts on other Species
• Footprint Management
Economic
• Income Generation
• Enterprise
• Organizing Framework
• Legal & Regulatory Framework
Michael Ben-Eli (2014)



Marina Boustos, Costa Rica, July 2014

Value Proposition of Systems Approach

- Understand better the current dynamic of a community and how certain variables or factors influence that dynamic;
- Explain existing patterns of community behavior over time;
- Interpret emergent properties of community systems;
- Examine various perspectives of community development interventions;
- Identify and explore leverage points in the community;
- Predict how the community responds to constraints and disturbances;
- Link policy actions that affect communities to development interventions;
- Explore possible unintended consequences of decisions; and
- Monitor and evaluate the performance of development interventions and decide on how to make adjustments as projects unfold, thus leading to more sustainable projects.

"Do today's science and engineering graduates have the skills and tools to address the global problems that our planet and humans are facing today, or will be facing within the next 20 years?"

Global Issues: Peace/conflict, climate change, poverty reduction, water, energy, shelter, communication, etc.

Developing a new generation of global engineers and scientists for the 21st century

Engineers and scientists are called to be CHANGE-MAKERS, peace-makers, social entrepreneurs, and facilitators of sustainable human development