





“No problem can be solved with the same consciousness that created it.”  
*Albert Einstein*

“It is difficult to get a man to understand something when his job depends on not understanding it”

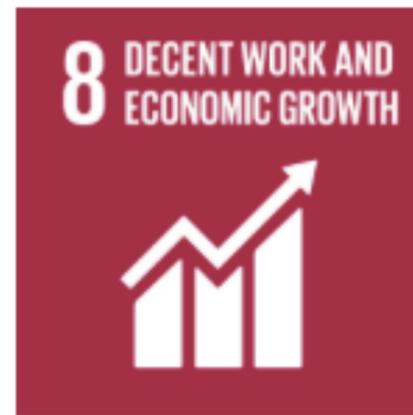
*Upton Sinclair*

# Ideation: Seeing the World Through the Eyes of a SDG

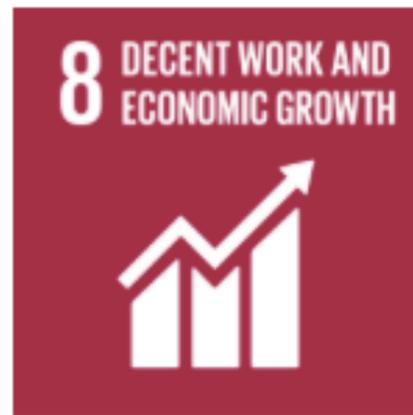
5th GEOSS Science and Technology Stakeholder Workshop  
*Linking the Sustainable Development Goals to  
Earth Observations, Models and Capacity Building*



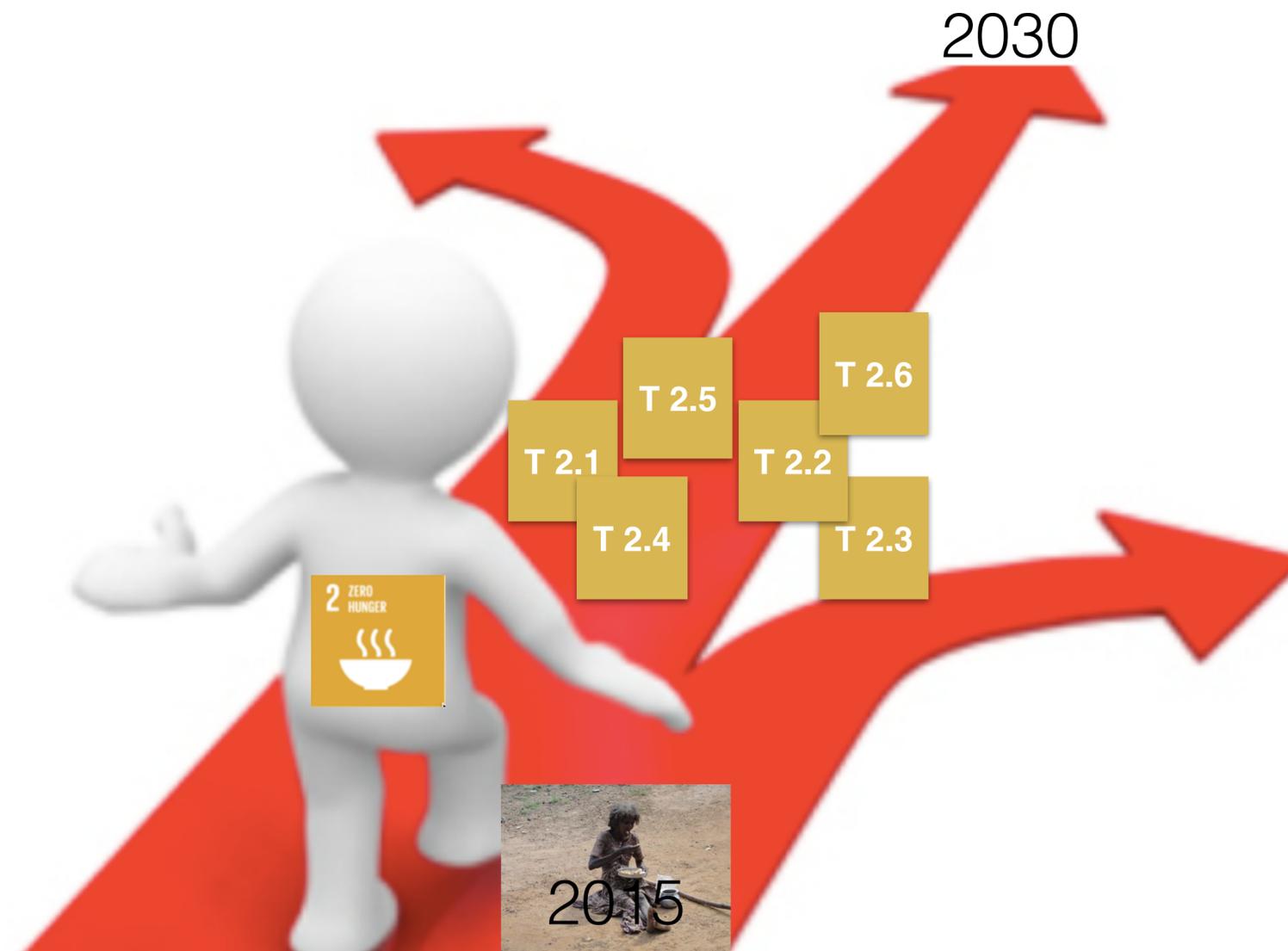
# The Life of a SDG



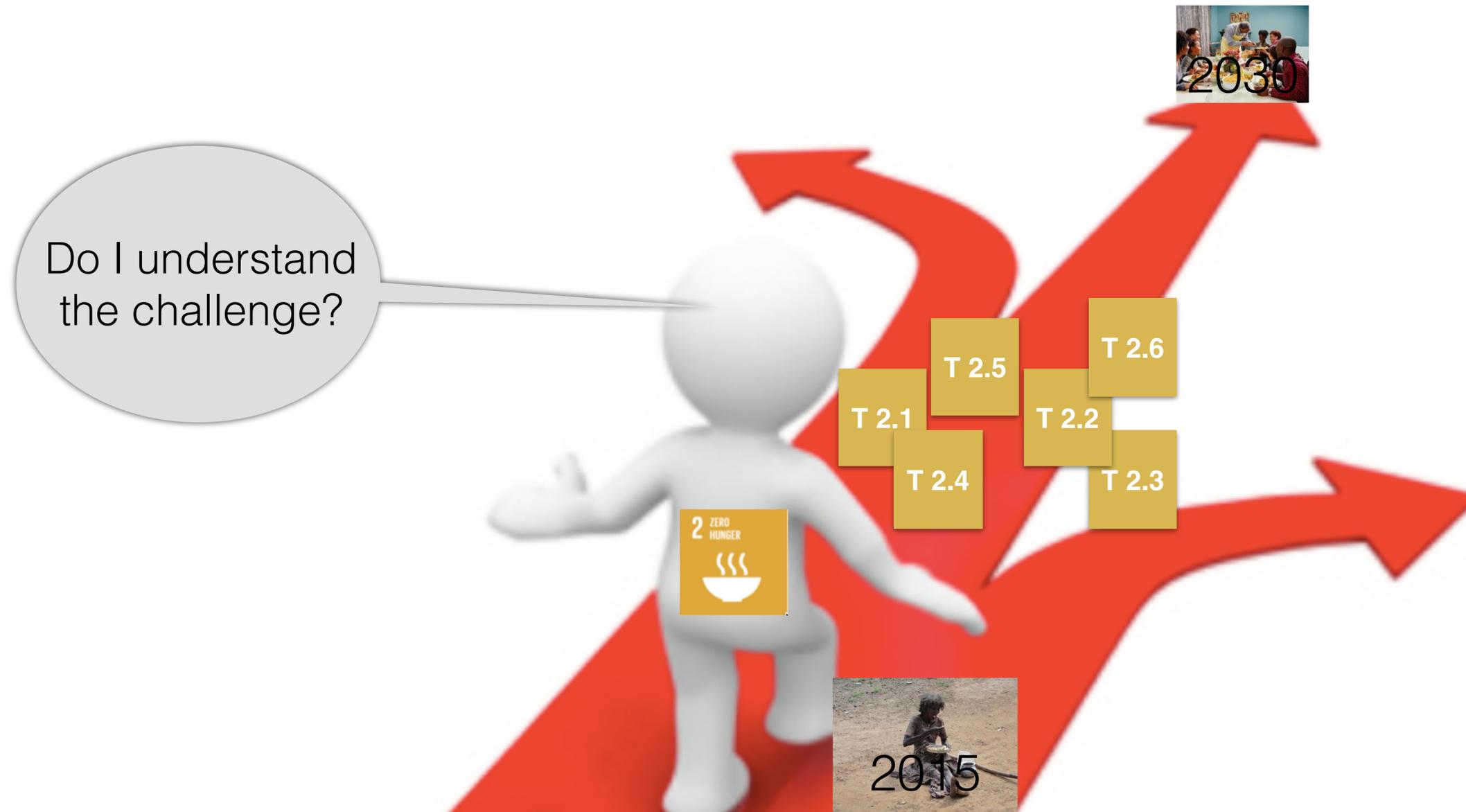
# The Life of a SDG

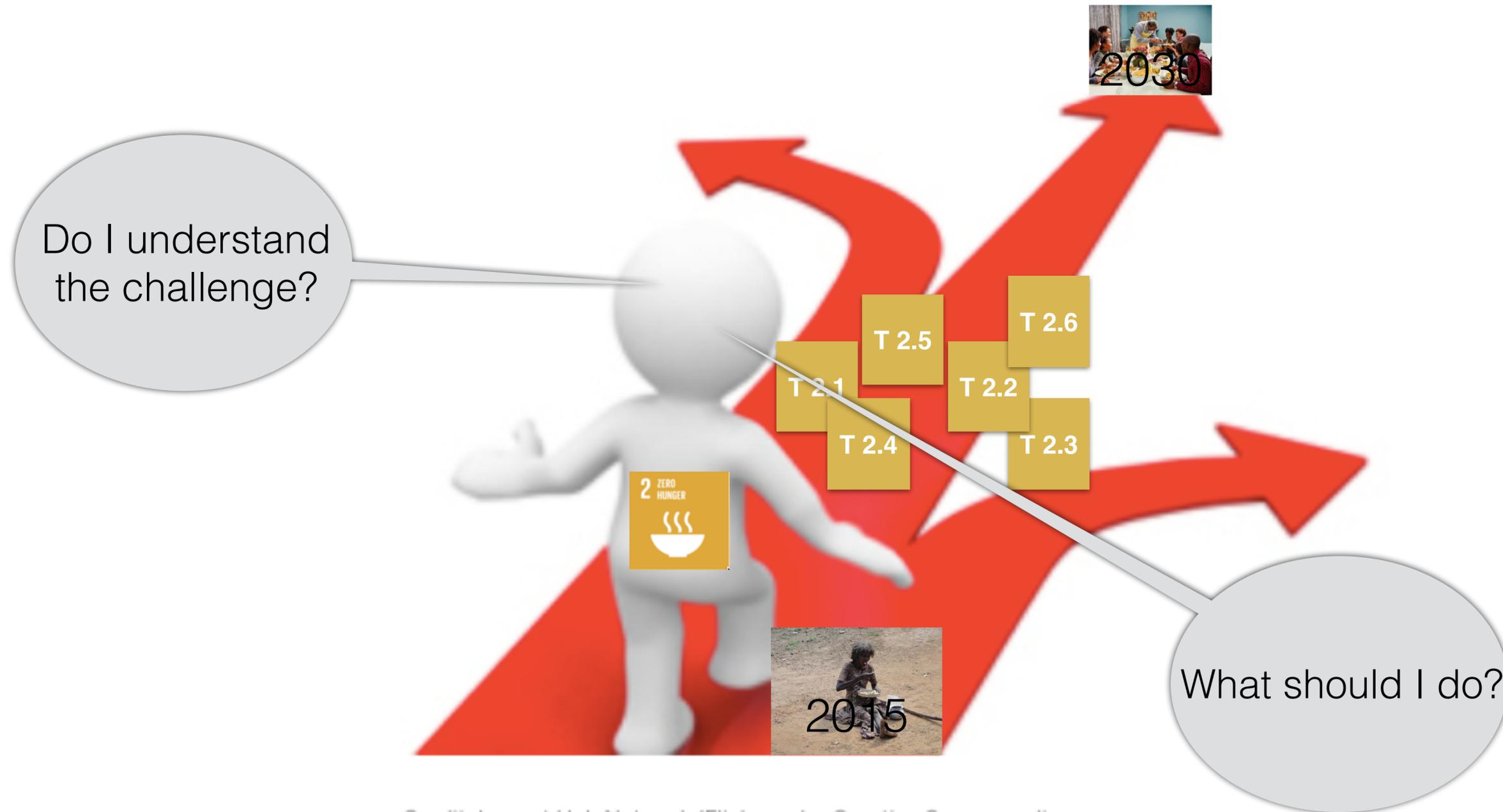


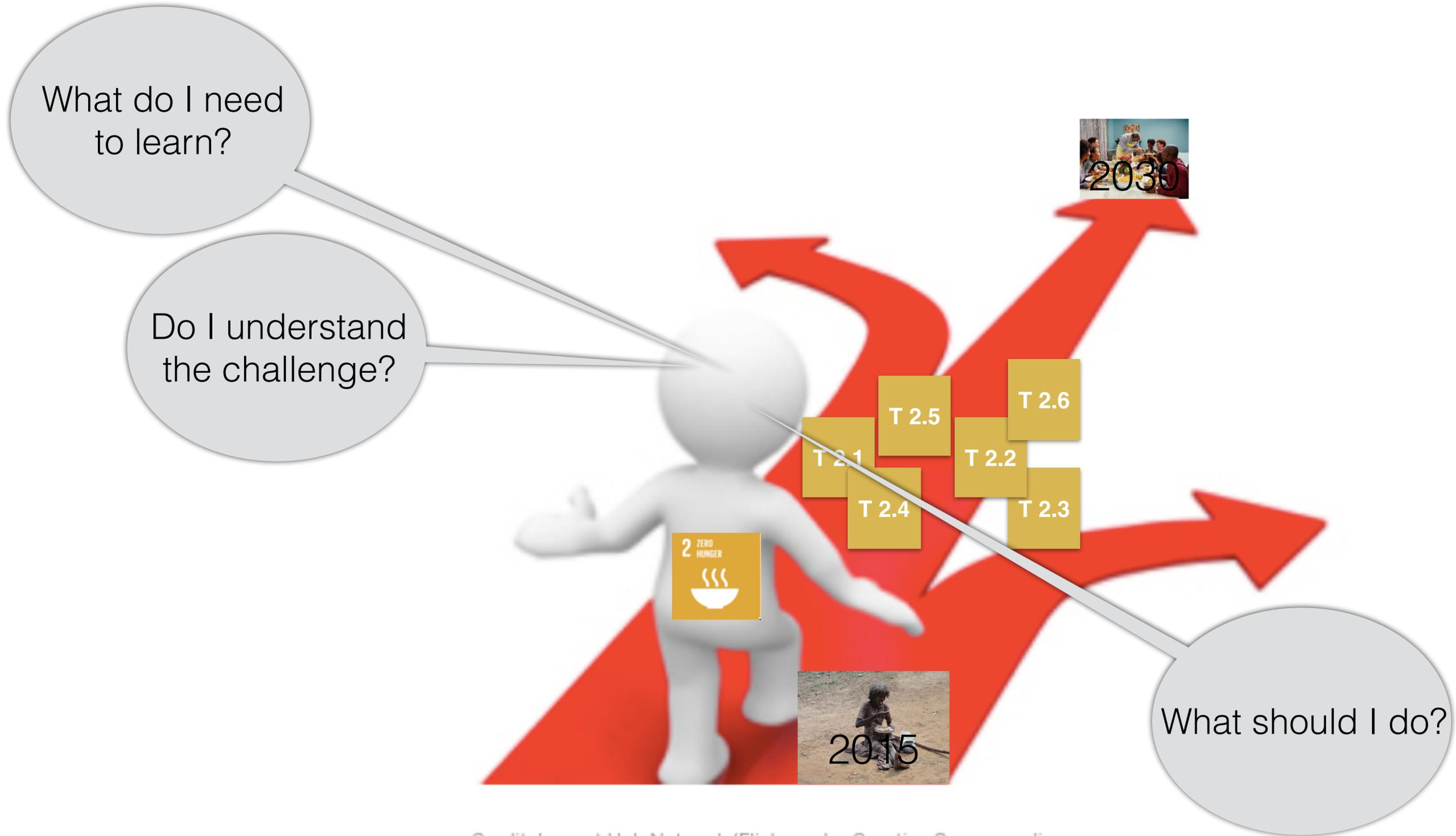


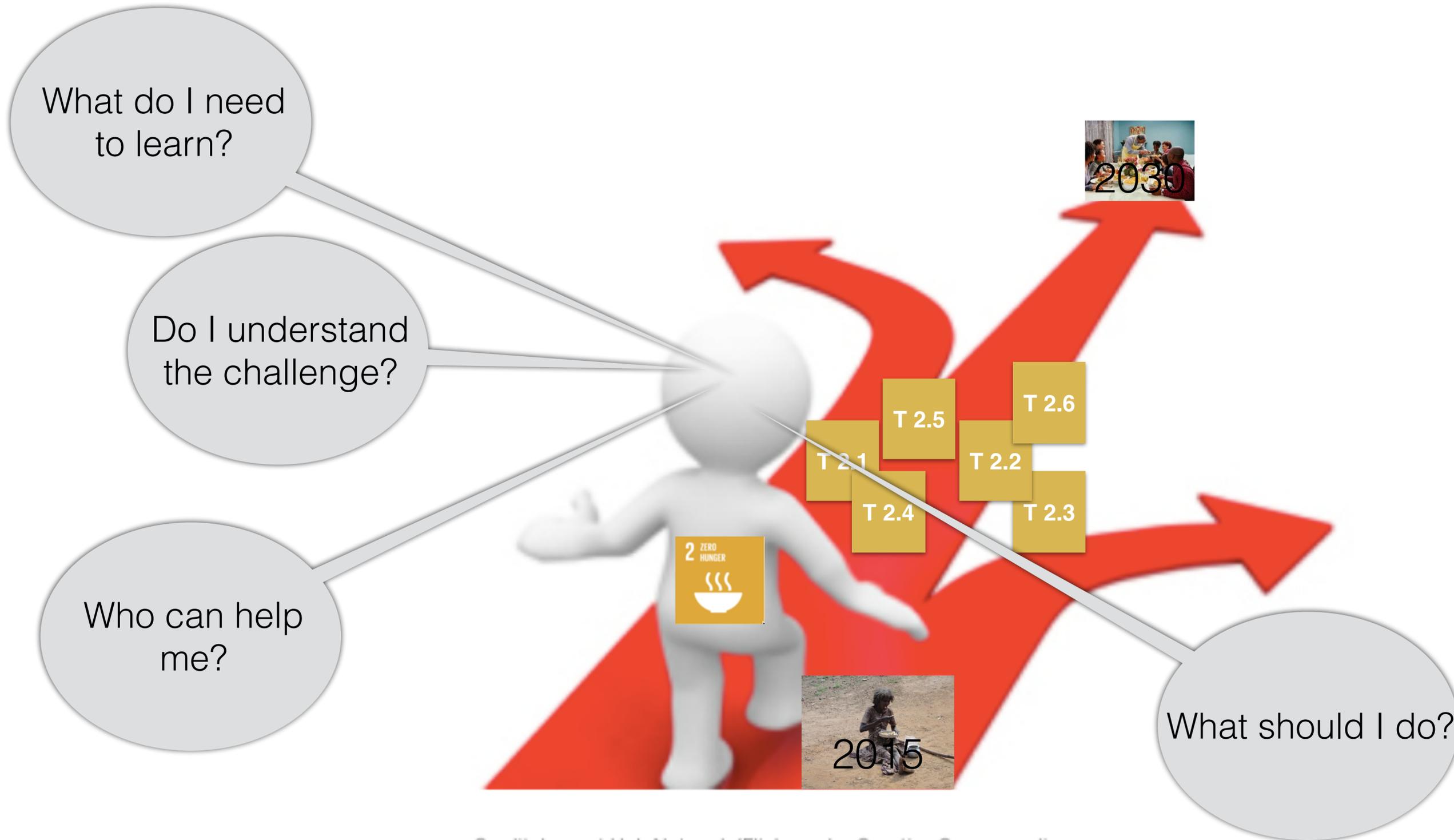


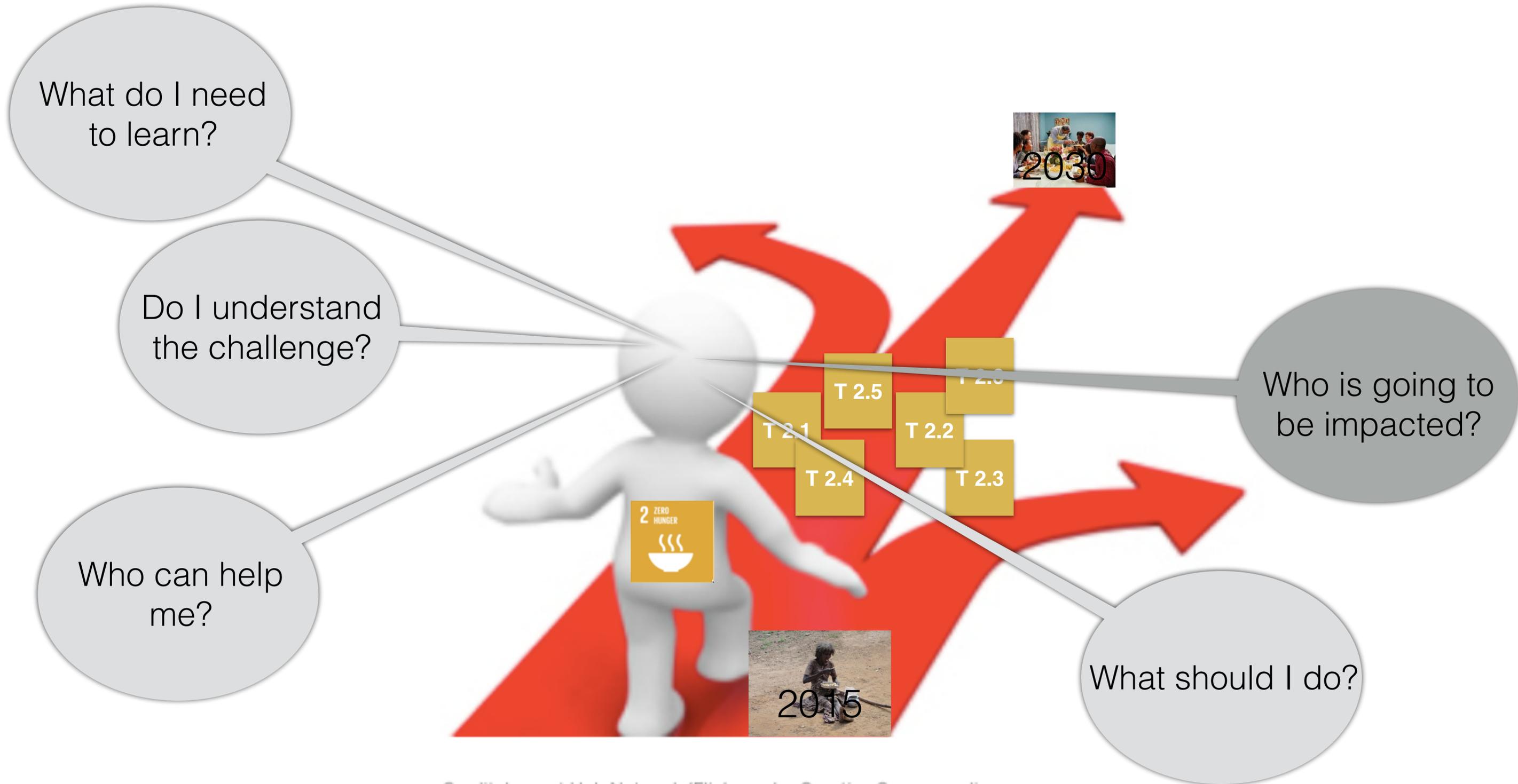


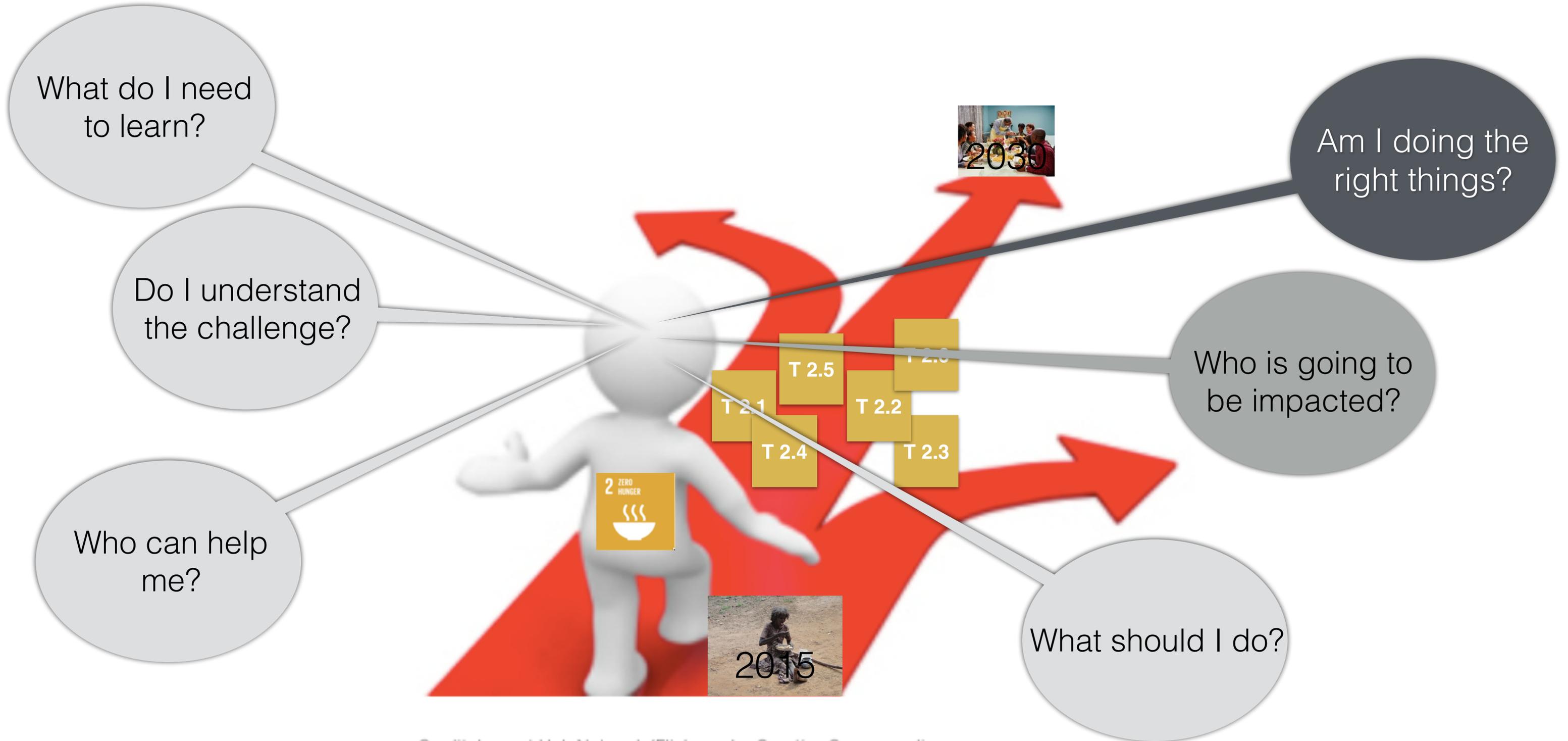




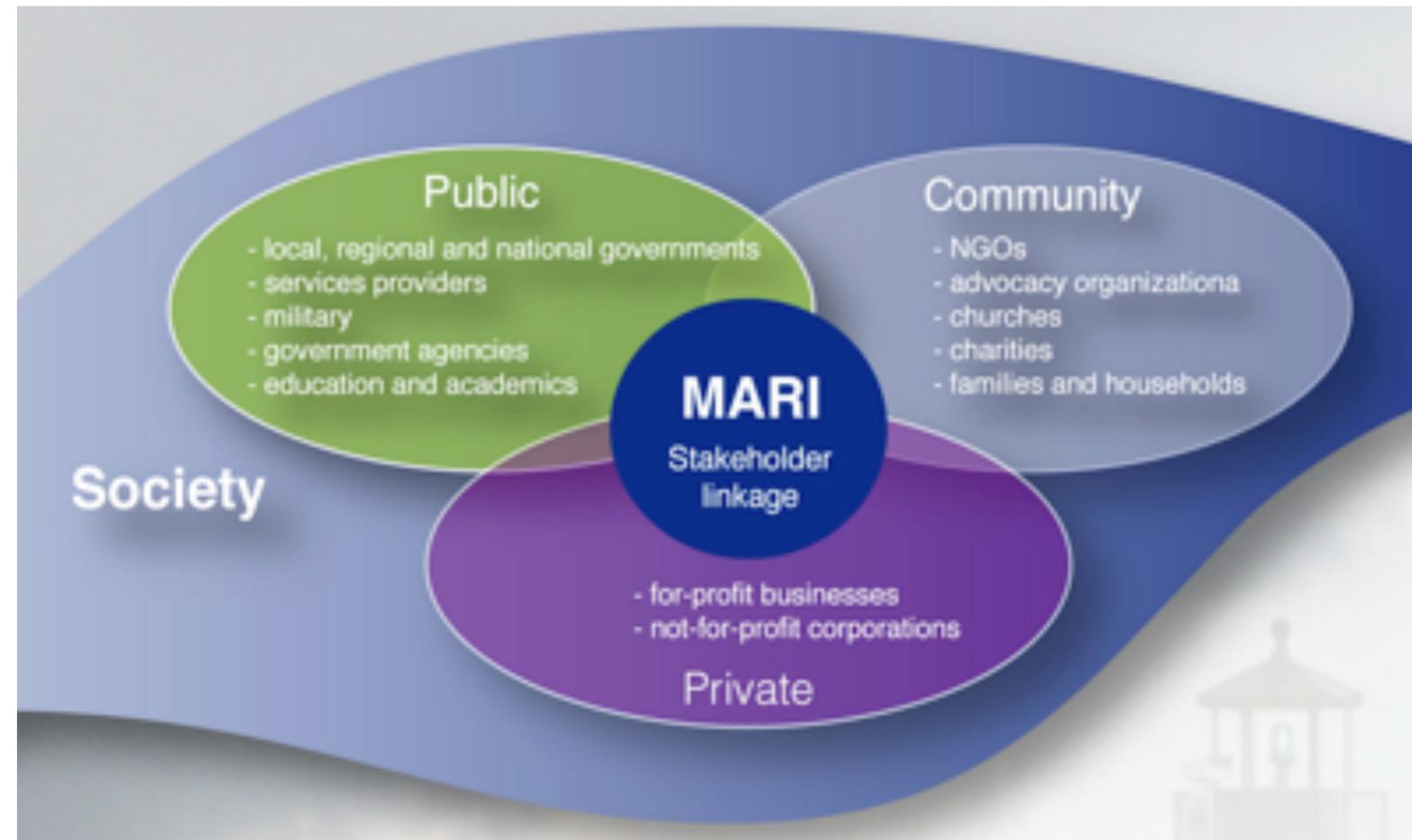










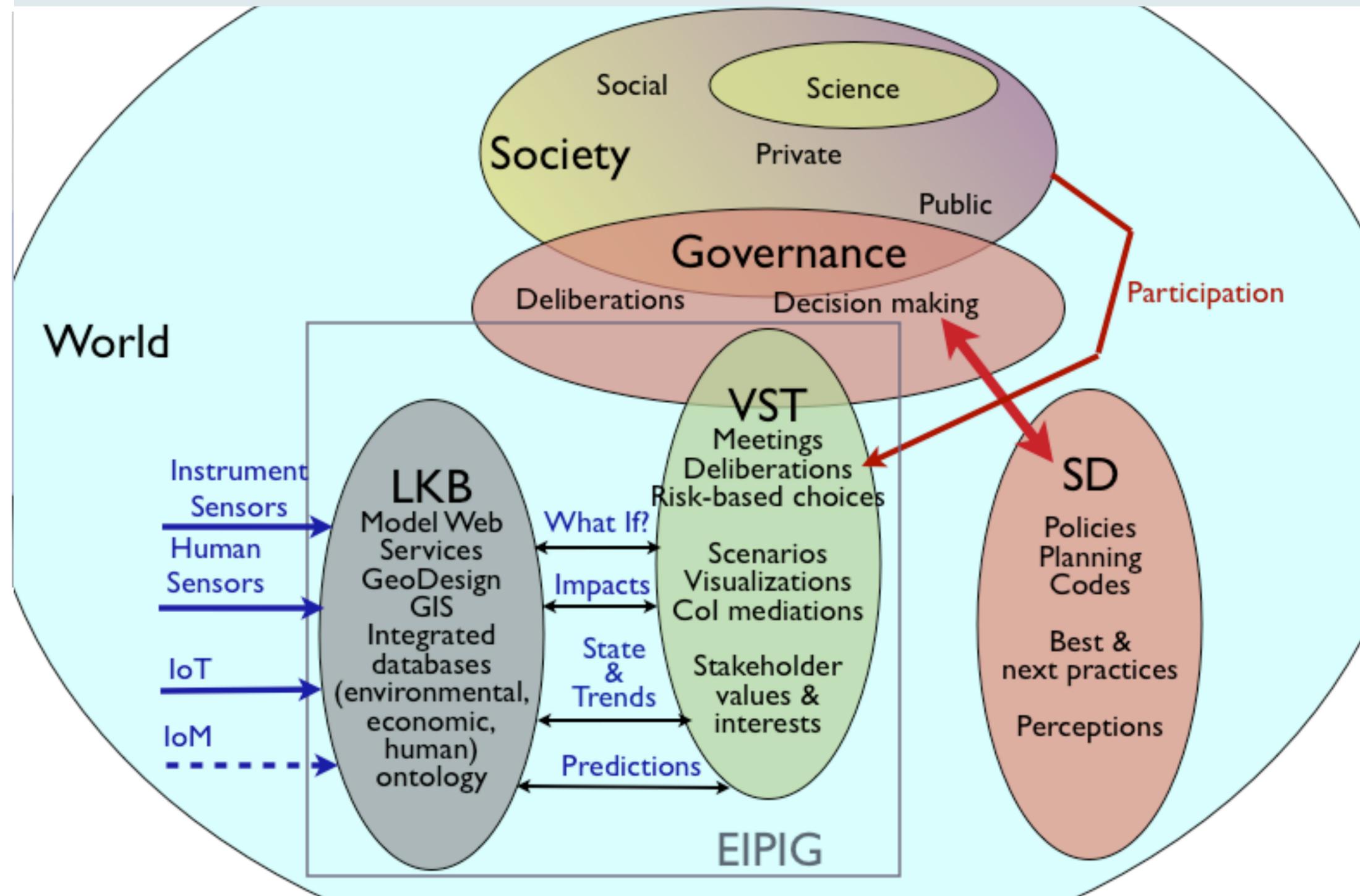


A platform for all stakeholders for

- co-design,
- co-creation, and
- co-usage

of practice-relevant knowledge ...

## Enabling Informed Participation In Governance (EIPIG)



A platform for all stakeholders for

- co-design,
- co-creation, and
- co-usage of practice-relevant knowledge ...



Transformation Scientists



“Wizard Clairvoyant”  
*Exploring the Future  
with Simulations*

Scientific knowledge



ETHICIST



ENGINEER



SOCIAL SCIENTIST

NATURAL SCIENTIST



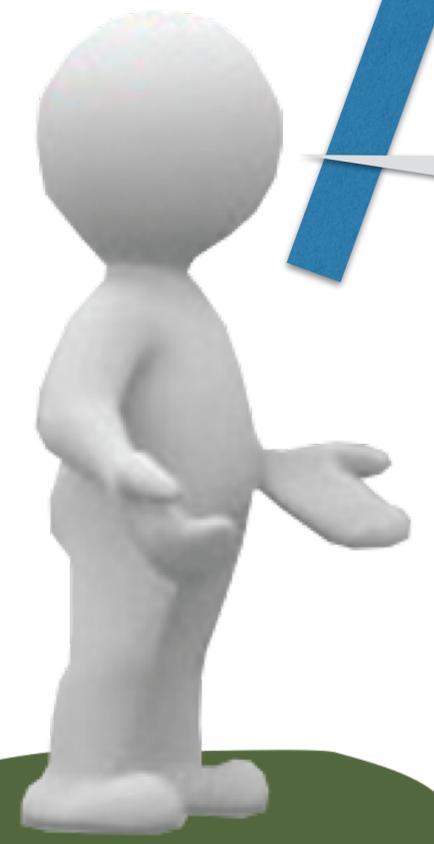
ECONOMIST



Options



I have a goal



POLICY MAKER



Transformation Scientists

“Wizard Clairvoyant”  
*Exploring the Future  
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Scientific knowledge



ECONOMIST

ENGINEER

NATURAL SCIENTIST

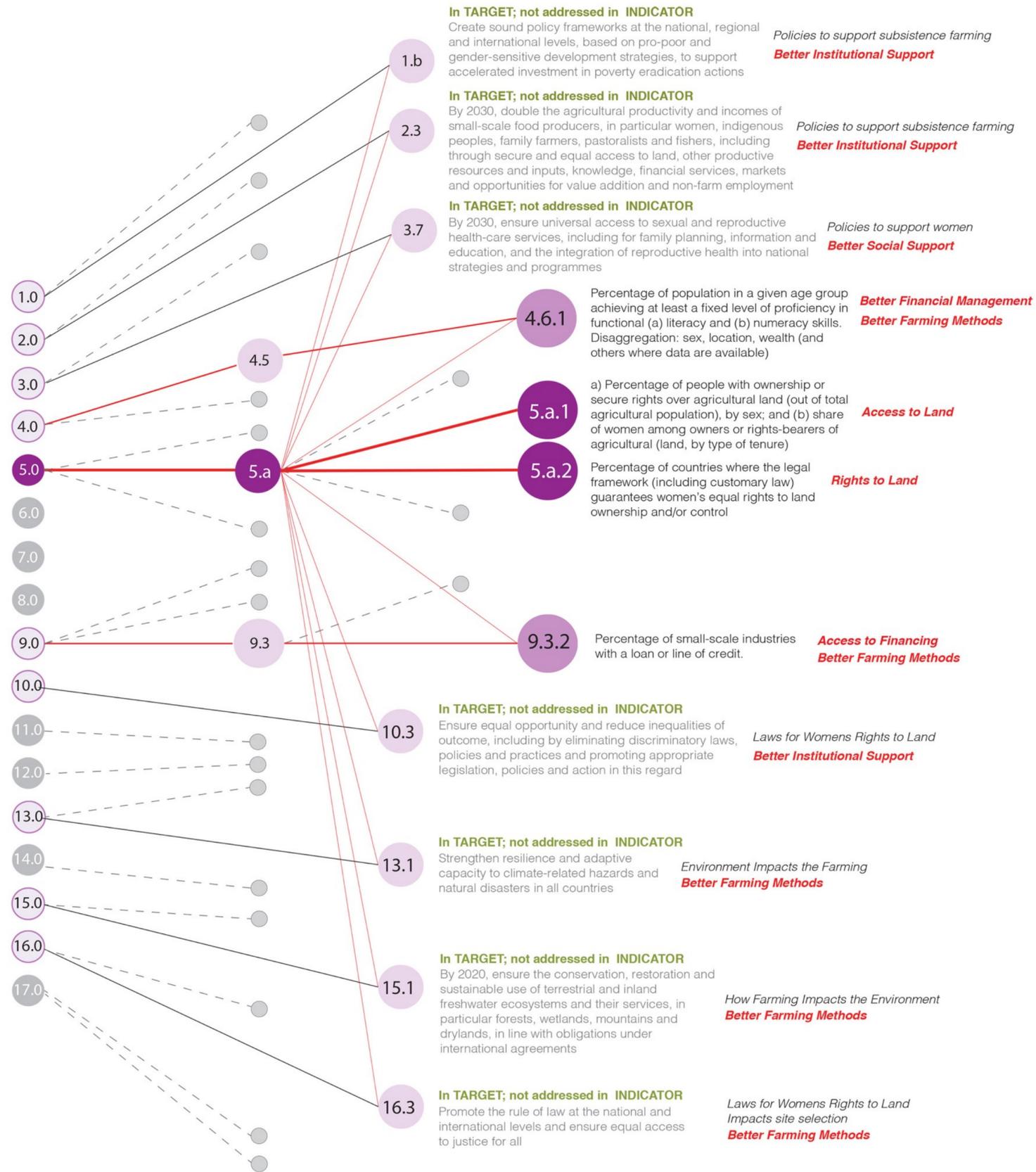
SOCIAL SCIENTIST



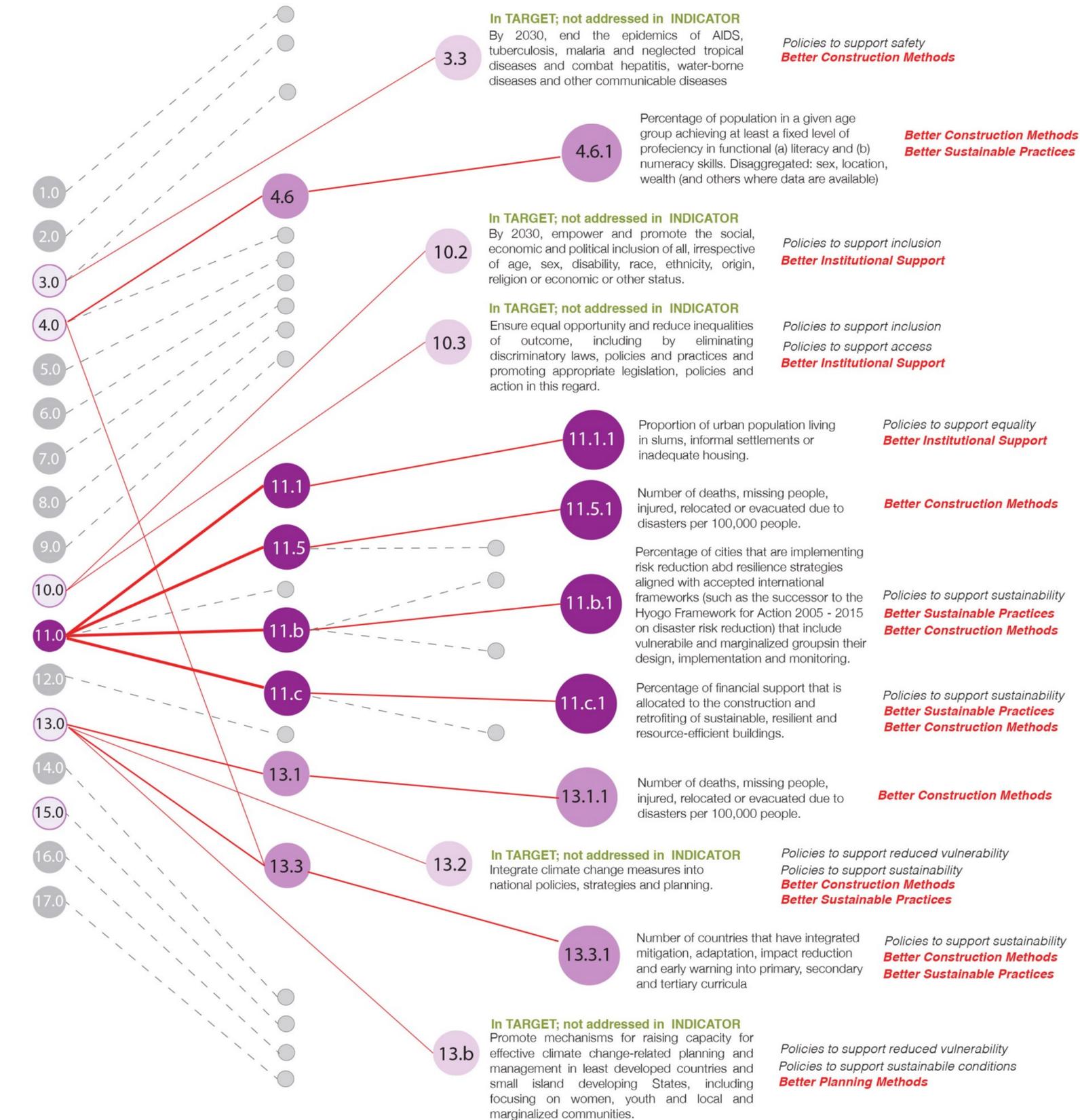
am I have a goal



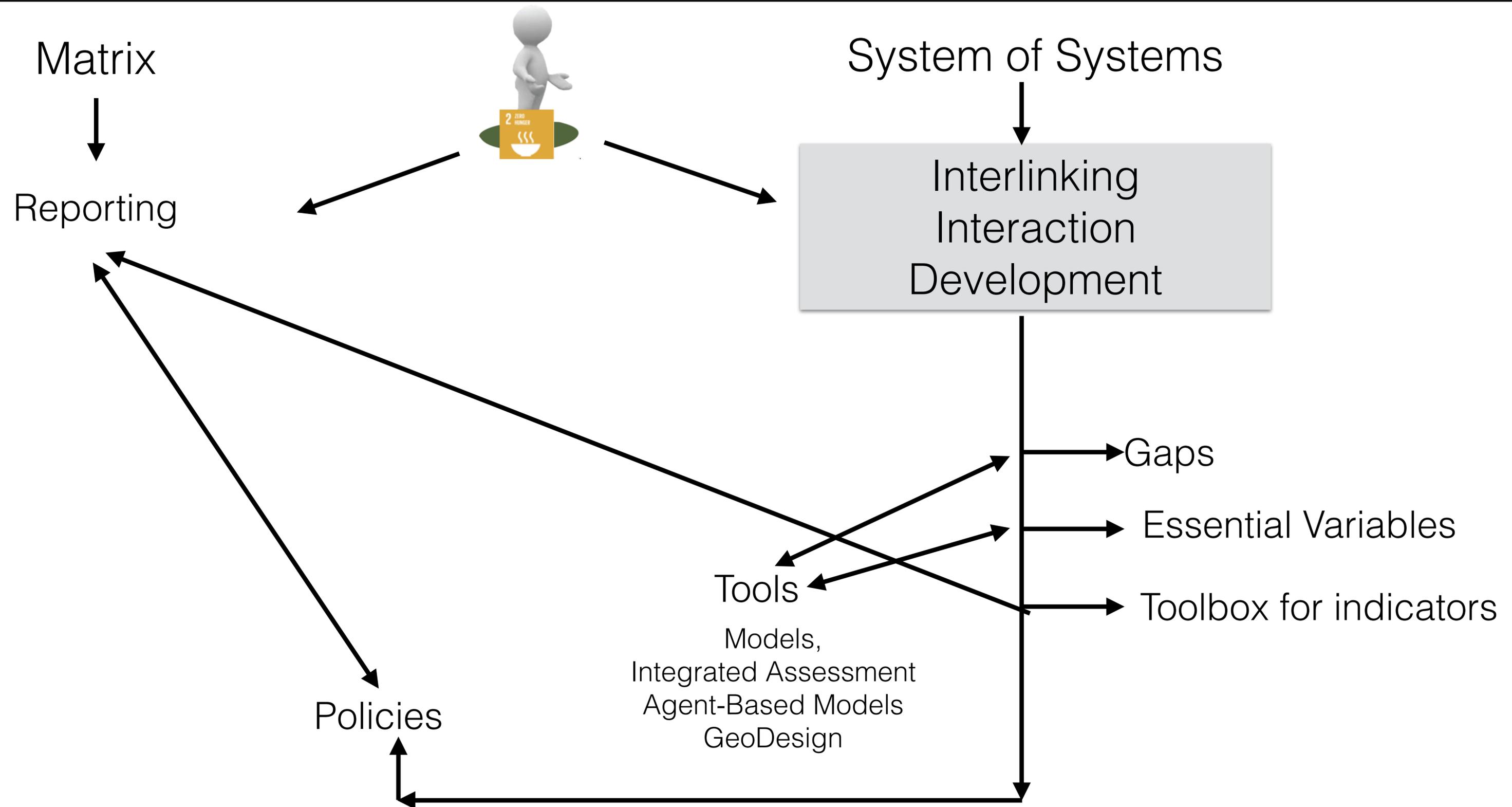
# Assessing Interactions and Interdependencies



# Assessing Interactions and Interdependencies



# The Life of a SDG



2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

# Session Goals

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Normative ethics:

- Duty not to contribute to harm - not to contribute to massive, systemic harm
- Duty to justice
- Obligation to our children's future

# Session Goals

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- Identify interactions and interdependencies: Examples
- Develop approach to assess interdependencies: Nexus approach? System of Systems approach?
- Discuss tools to aid policy development across departmental boundaries: Agent-Based Models? GeoDesign? Wizard Clairvoyant?
- Separation of mind-independent and mind-dependent parts of sustainability:
  - real-world system properties versus human ethics, values, rules, principles and models:
  - we can't change the real-world response to our actions, but we can change the way we are in the world.
- Address discrepancy between normative and descriptive ethics:

## Normative ethics:

- Duty not to contribute to harm - not to contribute to massive, systemic harm
- Duty to justice
- Obligation to our children's future