

Sciences and Arts for Sustainability

**EADI
University of York
2011**

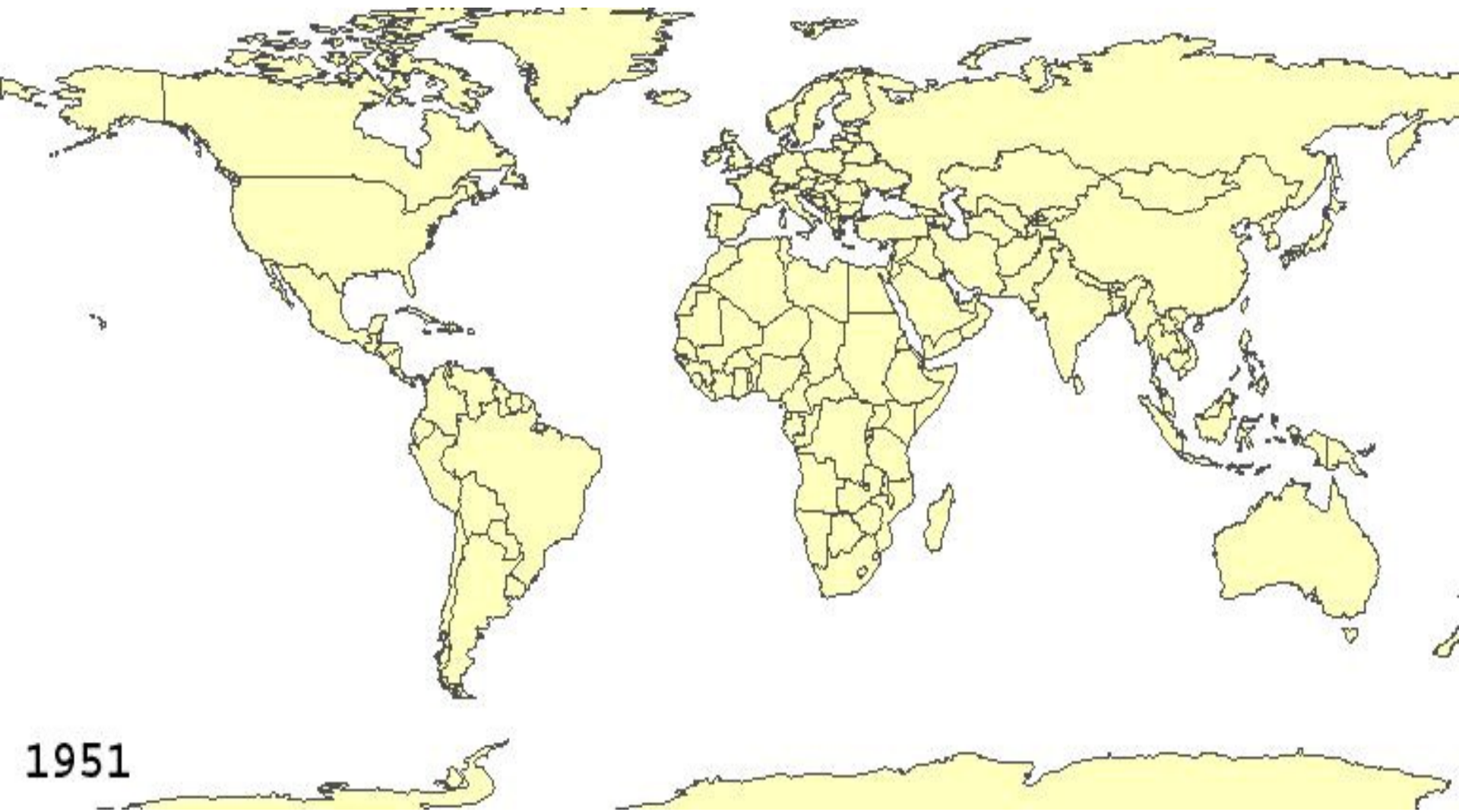
Charles Hopkins

**UNESCO Chair
York University, Toronto, Canada**

The World is Changing

The world has always been changing but now this change is different in several ways -

- scale of the change
- speed of the change
- human influences

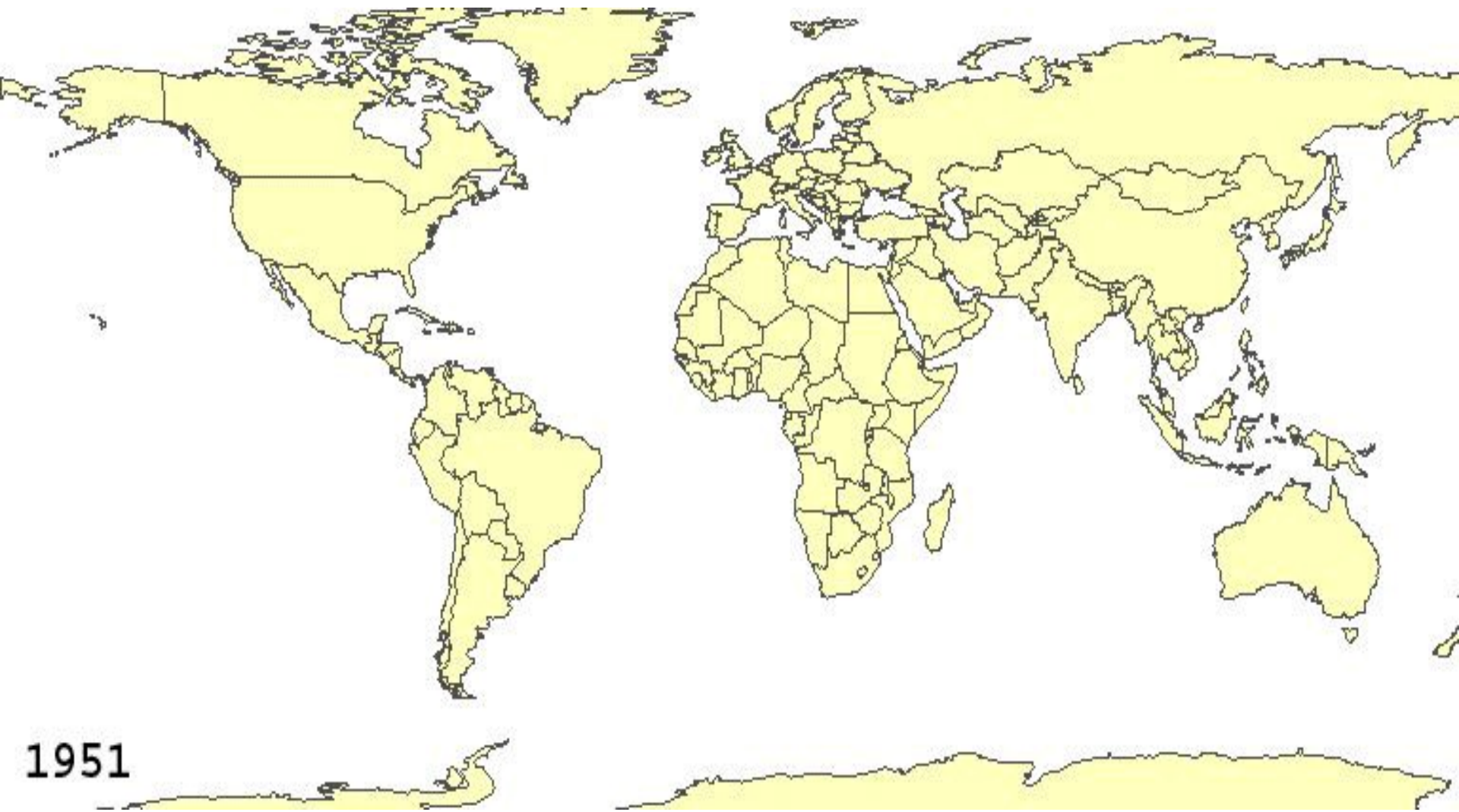


1951

Year of Peak Fish Harvest



Harvest peak



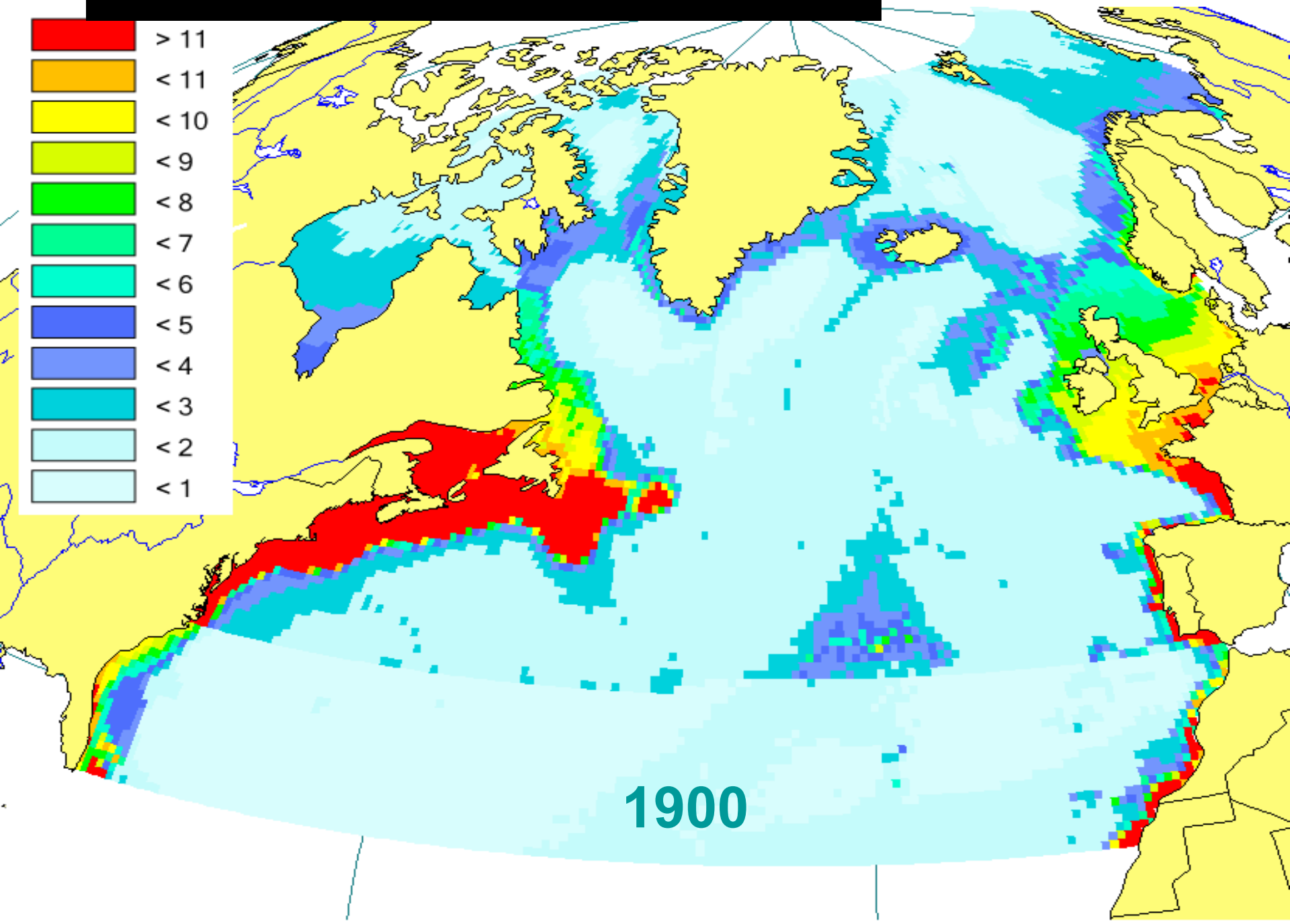
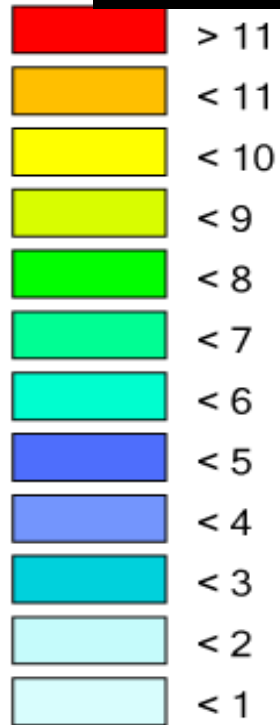
1951

Year of Peak Fish Harvest



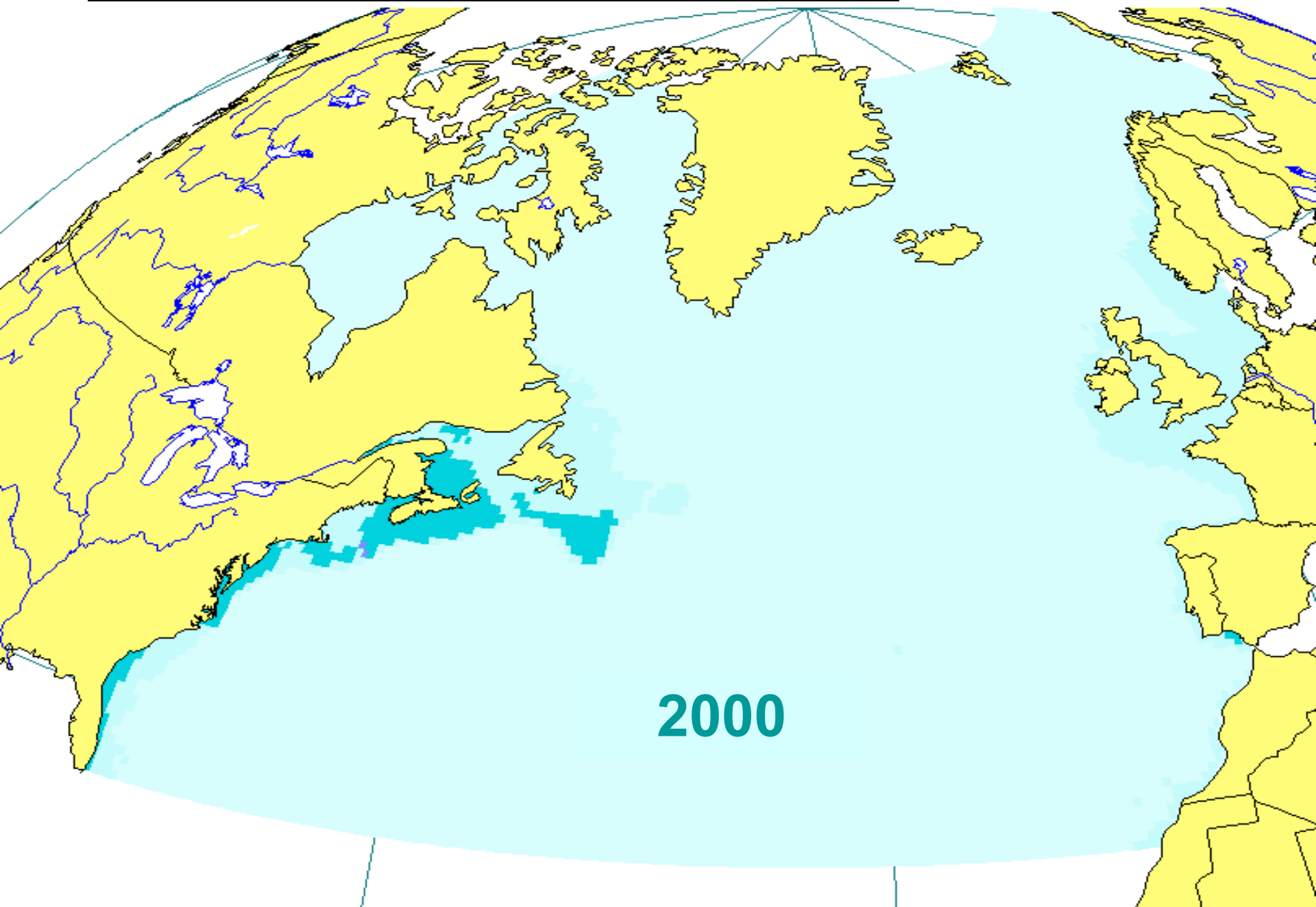
Harvest peak

Biomass of Table Fish (tons per km²)



1900

Biomass of Table Fish (tons per km²)



Societies' Challenges

Provide for 50% more people:

- using less water
- using less land
- using fewer ocean food resources

while

- quadrupling the global energy supply (14TW–56 TW) (carbon free) while replacing existing carbon infrastructure
- addressing new issues as they emerge
- developing employable skill sets
- developing the will and skills to act with synergy

The Sustainability Vision

Well-being
For All

Forever !

Scandinavian perspective



Lonely George, Galapagos

Our Responsibility

If we are aware of these possibilities, what are our collective responsibilities to help our children and those of “others”?

A Question for All Societies:

What should our students:

- know,
 - be able to do,
 - and value enough to act upon,
- when they graduate?

The Purpose of Education

Learning:

to know

to do

to be

to live together

Perhaps we can alter this last purpose slightly to:

Learning:

to live together with “**others**” and “**sustainably**”?

- Jacques Delors – Learning the Treasure Within: UNESCO

The Four Major Thrusts of Education for Sustainable Development (ESD)

- 1 Access to quality basic education**
- 2 Reorienting existing education**
- 3 Public awareness and understanding**
- 4 Training programs for all sectors**

Agenda 21 -92, UNESCO-96, UNCSD -98, JPOI-2002

ESD and Non-formal Ed

- Much has been accomplished by:
- NGO's
- Faith-based groups
- The arts community
- Media
- Institutions- Zoos, Botanical Gardens etc.
- Private and public sector training

Basic Ed on 1 \$/pupil/year



Example: Uganda



Example: India

Manitoba Ed Goal: Canada

*“To ensure education in Manitoba supports students experiencing and learning about what it means **to live in a sustainable manner.**”*

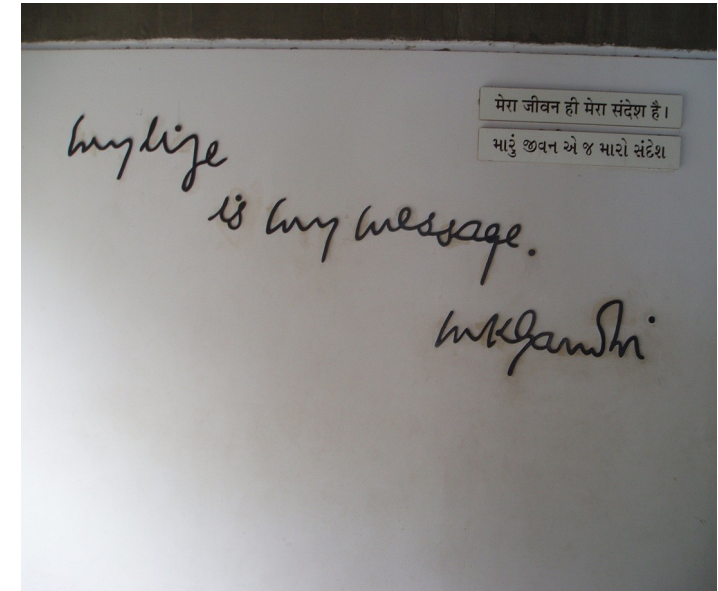
Reorienting Existing Formal Education Means Addressing:

Not only

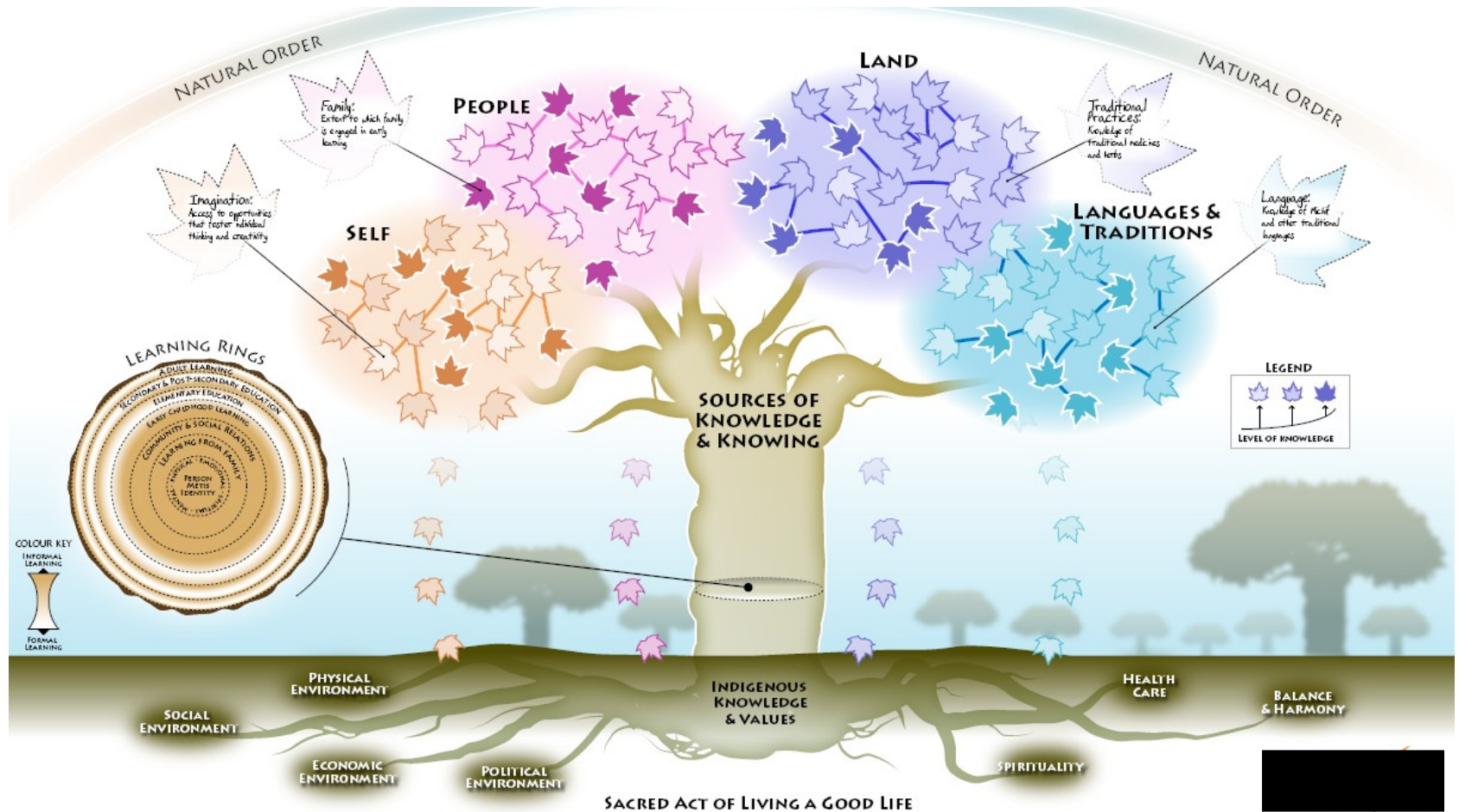
- Buildings
- Curriculum
- Practices and actions

But also

- What we value
- What we evaluate
- Monitor and report upon
- Modeling sustainability



Aboriginal Learning Knowledge Centre: Métis Holistic Lifelong Learning Model



Redefining Success in Aboriginal Learning

Principles of Learning: FN Emerging Model

Harmony and Well Being: Individual and Collective

Purpose

- To protect the earth to ensure sustainability of all life.

Principles of Learning

- Holistic (physical, emotional, social and spiritual), experience based and cumulative (life -long)
- personal and collective (individual and community or societal focused – connected to ...natural world, language, traditions and ceremonies, self, family, ancestors, clan, community nations and other nations – intergenerational – nurtured by mentors, elders, guides, etc.)
- natural or organic, integrated, dynamic evolving process with depth in knowledge (wisdom) emerging as the ultimate outcome
- circular (self -generating) and available at all stages of life
- promotes responsibility, adaptability and interdependence
- respectful of place and the natural order of life
- at its core it is culturally based – language based and open to new experience and knowledge (Indigenous and Western traditions)
- can be enhanced or disrupted by physical, social, cultural and political environment (natural, social, economic and political environment s)

MISSION

"Mino-pimatisiwin"

Teaching, applying, modelling and sharing
First Nation Knowledge, values, beliefs,
practices and ideals in promoting
Sustainability in First Nation Schools
with guidance by elders, First Nation
educators and land-use practitioners for the
purpose ^{of} ~~and~~ preserving Mother Earth for
future generations

Indigenous Wisdom



Explaining the artefacts of the ancestors to children in the museum

DESD 2014 and Beyond

- Celebrations Japan and around the world
- Formal meeting plus related satellite events
- Building the next phase – global work program
- Widening partnerships-Private/public sectors
- Creating synergy with EFA, MDGs, Rio+20
- Synergy with UN Agencies, INGOs and NGOs
- Higher education
- Institutions

Education FOR Sustainable Development (ESD)

- Definition

ESD is the contribution of the world's education, public awareness, and training systems to learning our way towards a more sustainable future

Understanding ESD

Environmental Education, Population Education, Development Education, Energy Education, HIV/AIDS Education, Permaculture Education, Citizenship Education, Democracy Education, Consumer Education, Media Education, Outdoor Education, Experiential Education, Workplace Education, Conservation Education, Anti-Racist Education, Religious Education, Equity Education, Gender Education, Holocaust Education, Entrepreneurship Education, Horticulture Education, Water Education, Global Education, Drug Education, Sex Education, International Studies, Family Studies, Human Rights Education, Women's Studies, Native Studies, Values Education, Natural History Education, Vocational Education, Economic Education, Anti-smoking Education, Conflict Resolution Education, Workplace education, Disaster Prevention Education, Computer Studies, Life-Skills Education, Recycling Education, Civics Education, Heritage Education, Community Studies, Multicultural Education, Anti-Violence Education, Systems Thinking Education, Futures Education, Biodiversity Education, Pioneer Studies, Nutrition Education, Resource Management Education, Self-Image Education, Peace Education, Leadership Education, Cooperative Education, Character Education, Sexual orientation Education.....(100 plus)

Premises of the “Strengths” Model: a starting point for reorienting ESD

- No single discipline/leader/teacher/employee can do it all
- Every discipline/leader/teacher/employee can contribute something
- Some individuals or sectors can take lead roles in directing/managing the reorientation
- Leadership and coordination of these “strengths/initiatives” are key elements as we “learn” our way forward
- **“Train the trainers” becomes “learn with the learners”**

Radical Hope



Youth Engagement (CEA)

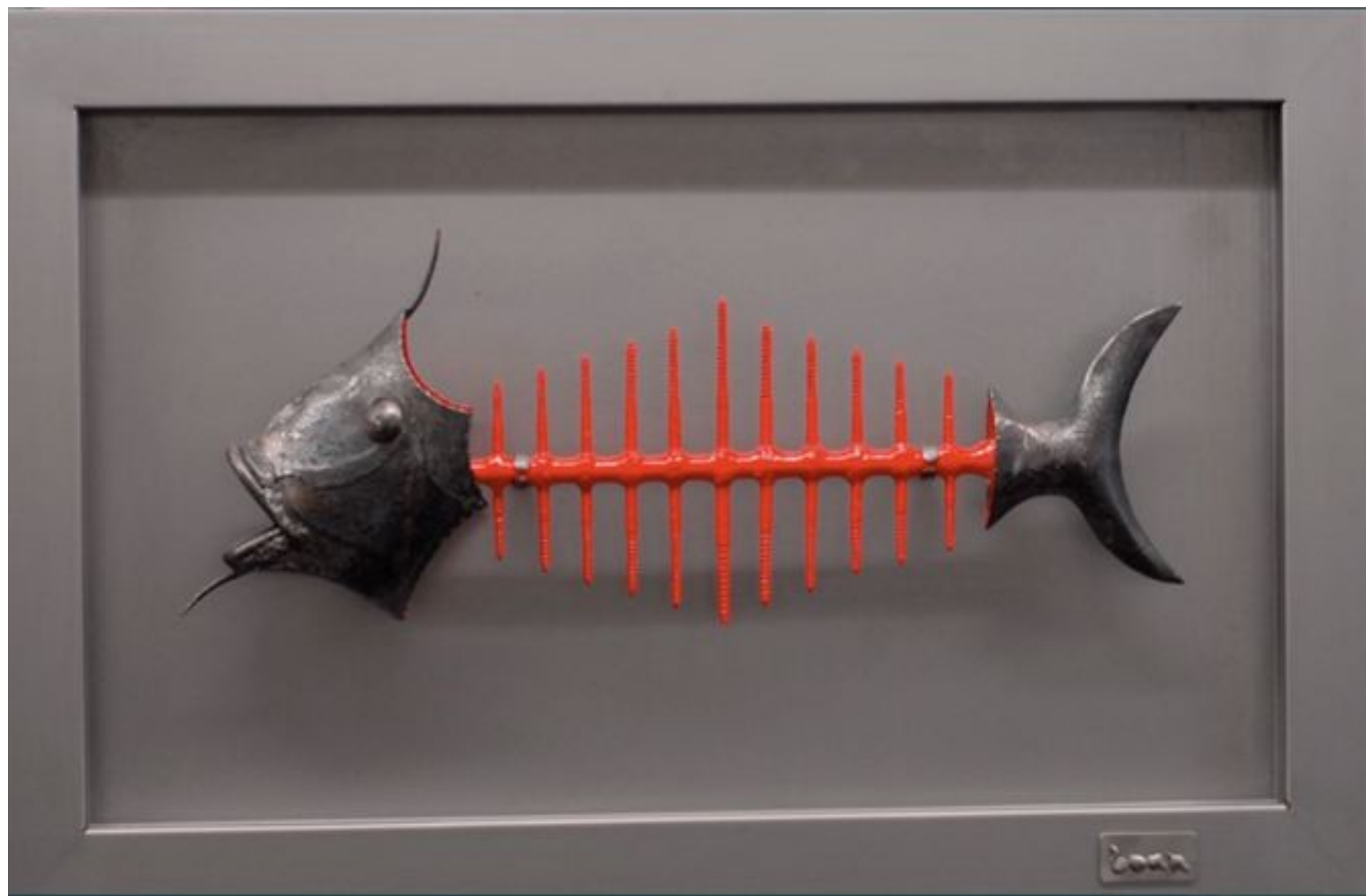
Percentage of Students

Rectangular Snip

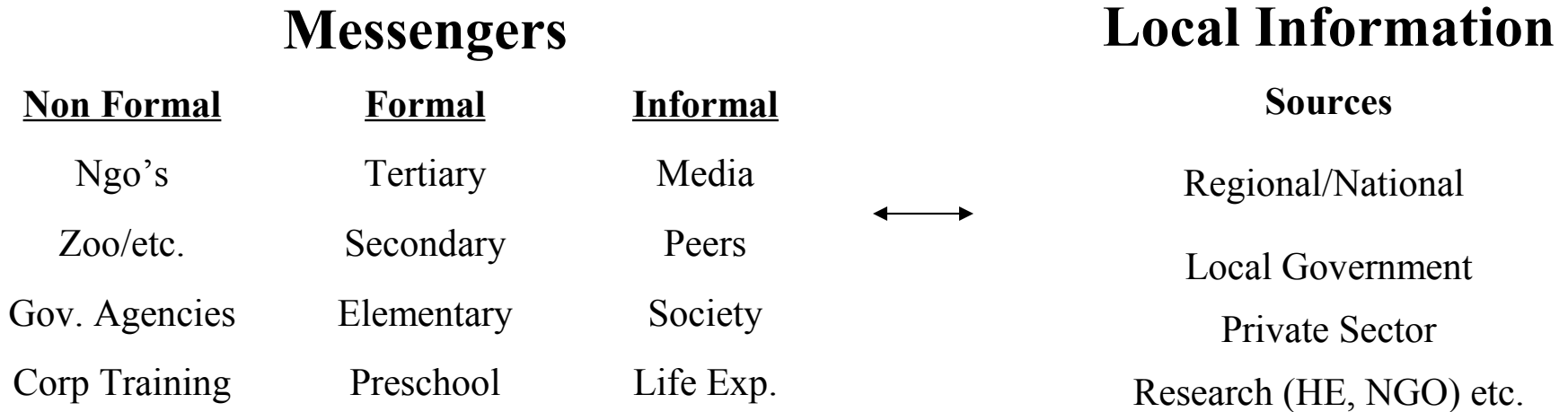








UNU Regional Centre of Expertise



Outcomes

- Improved academic outcomes as learning is relevant and in scale etc.
- More knowledgeable/supportive citizenry
- More sustainably oriented production and consumption
- Perhaps a shift in community behaviour