

# Chapter 23. Educating for Environmental Citizenship in non-formal frameworks for secondary education

Demetra Hadjichambi, Daphne Goldman, Andreas Ch. Hadjichambis, Gema Parra, Katarina Lapin, Jose Jesus Delgado Pena, Marie-Christine Knippels, Frans Van Dam, Luca Baglivo, Monika Rusztecka



## Why non-formal education?

- Non-formal (and informal) education – important arenas for **educating the public** for the environment (Ballantyne and Packer, 2005; Hollweg et al. 2011; NAAEE 2009; UNESCO, 1978).
- Average citizens spends ~3% lifetime in schools while learning & developing need to continue throughout lifetime.
- Non-formal - arena for **lifelong learning** – crucial towards building sustainable societies.
- Non-formal frameworks are increasingly utilized to **support students'** learning in formal education (Bell et al., 2009).



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## 23.1 Characteristics of non-formal education that create a suitable medium for cultivating the attributes of an environmental citizen - **defining the context**

- **Comparison among non-formal, in-formal and formal learning** (Eshach, 2007)

Formal	Non-formal	In-formal
Usually at school	At institution out of school	Everywhere
Structured	Structured	Unstructured
Usually prearranged	Usually prearranged	Spontaneous
Motivation is typically more extrinsic	Motivation is typically more intrinsic	Motivation is mainly intrinsic
Compulsory	Usually voluntary	Voluntary
May be repressive	Usually supportive	Supportive
Teacher-led	May be guide or teacher-led	Usually learner-led
Learning is evaluated	Learning usually not evaluated	Learning not evaluated

“Non-formal learning occurs in a planned but highly adaptable manner in institutions, organizations and situations beyond the spheres of formal or informal education.” (Eshach, 2007, 172; Silberman-Keller, 2003).

While, similar to formal education, it is mediated, the **motivation** for learning may arise from the learner.



## 23.1 Characteristics of non-formal education that create a suitable medium for cultivating the attributes of an environmental citizen - **defining the context**

- Mapping **venues** for non-formal (& *free choice & lifelong*) learning (adapted from Falk, 2006)

Generic group	Exemplar venues
Museums	Natural history museums, science centers/museums, zoos, aquariums, botanical gardens, arboretums, nature centers
EE Centers	Structured programs sometimes linked to formal Curriculum
Parks	Local, regional, national
Ecotourism sites	Whale-watching and marine watching tours, Safaris and wildlife encounter trips, lodges in natural areas, Earthwatch expeditions (citizen science)
Audio-visual media	TV programs, films and videos; radio
Printed media	Newspapers, magazines & periodicals
Electronic media	Internet
National Community-based organizations	World Wildlife Fund, Sierra Club (USA), Society for Protection of Nature (SPNI)...
Clubs and movements	YMCA & YWCA, boys and girls clubs, scouts, youth movements, Elderhostel (USA organization of educational travel tours for older adults, currently Road Scholar)
Home environment	Conversations (family and friends), neighborhood and playgrounds, enrich



## 23.1 Characteristics of non-formal education that create a suitable medium for cultivating the attributes of an environmental citizen - **defining the context**

- **Characteristics of non-formal education and relevance to developing EC** (Goldman et al., 2017; Kilakoski & Kivijarvi, 2015; Orr, 1992; Silberman-Keller, 2003)

While non-formal education shares with formal education the attribute of being mediated, a major assumption of non-formal education is that social and educational goals can, and should, be realized via content and principles that deviate from rigid formal education structure.

- **Conversation** (good, guided) – a generative element that facilitates learning. Less opportunity for good conversation exists in governed formal ed.
- **Networks** – Define the communicative pattern of non-formal ed. in contrast to hierarchical in formal ed. Relationships, interdependence.
- **Tight versus loose learning spaces**– *Tight* (school) – rigid, functionality, homogeneity. *Loose* – enable heterogeneity, change, adaptation, negotiation.
- **Educational institution** – Diverse; perceived by participants as accommodating, more secure, less alienation compared to structured school.
- **Mutual development** –group will develop as long as its participants develop & vice versa. Metaphor for reciprocal relationship between individual and society; enhances social responsibility required of environmental citizens.
- **Experiential learning** – Involves social engagement → sense-of-responsibility, emotions, changing attitudes, awareness, sense-of-place that together promote REB.

## 23.2 Examples of secondary non-formal settings and programs suitable for promoting Education for Environmental Citizenship [needs enriching]

### Learning from Forests – Certification for forest pedagogy, Austria

Training forest educators who contribute to secondary non-formal education and EC

- Forest-related EE
- Interdisciplinary approach,
- Creativity
- Dialogue between humans and nature

### Youth Clubs as a youth-engagement framework – Israeli youth movements

#### Principles

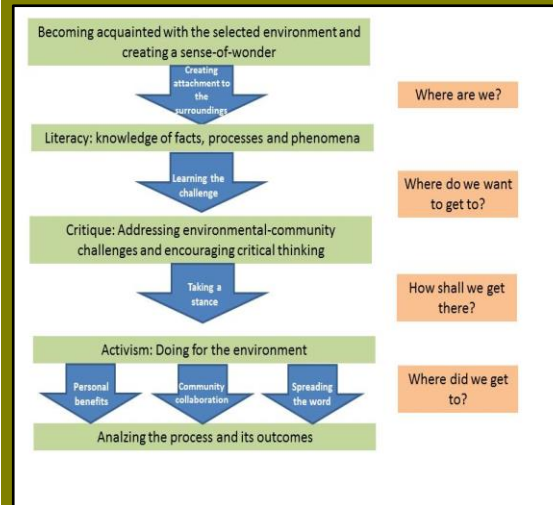
- Universal humanistic values
- Respect human rights and cultural diversity
- Community & social involvement
- Cultivate critical thinking, willingness and capacity for change
- Self realization

Recent development for EC:  
Certifying “Green” branches

### Society for Nature Protection, Israel

“Educate. Love. Protect.”

Pedagogical model of SPNI educational programs



### EE centers as non-formal settings promoting EEC – “Environmental Crime on the Coast”, CYCERE, Cyprus

Educational methodology  
Problem-based-learning, experiential learning

- **Inquiry**
  - The ecosystem
  - Food web
  - Effect of littering
  - Coast and humans
- **Action in Community**



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### 23.3 Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

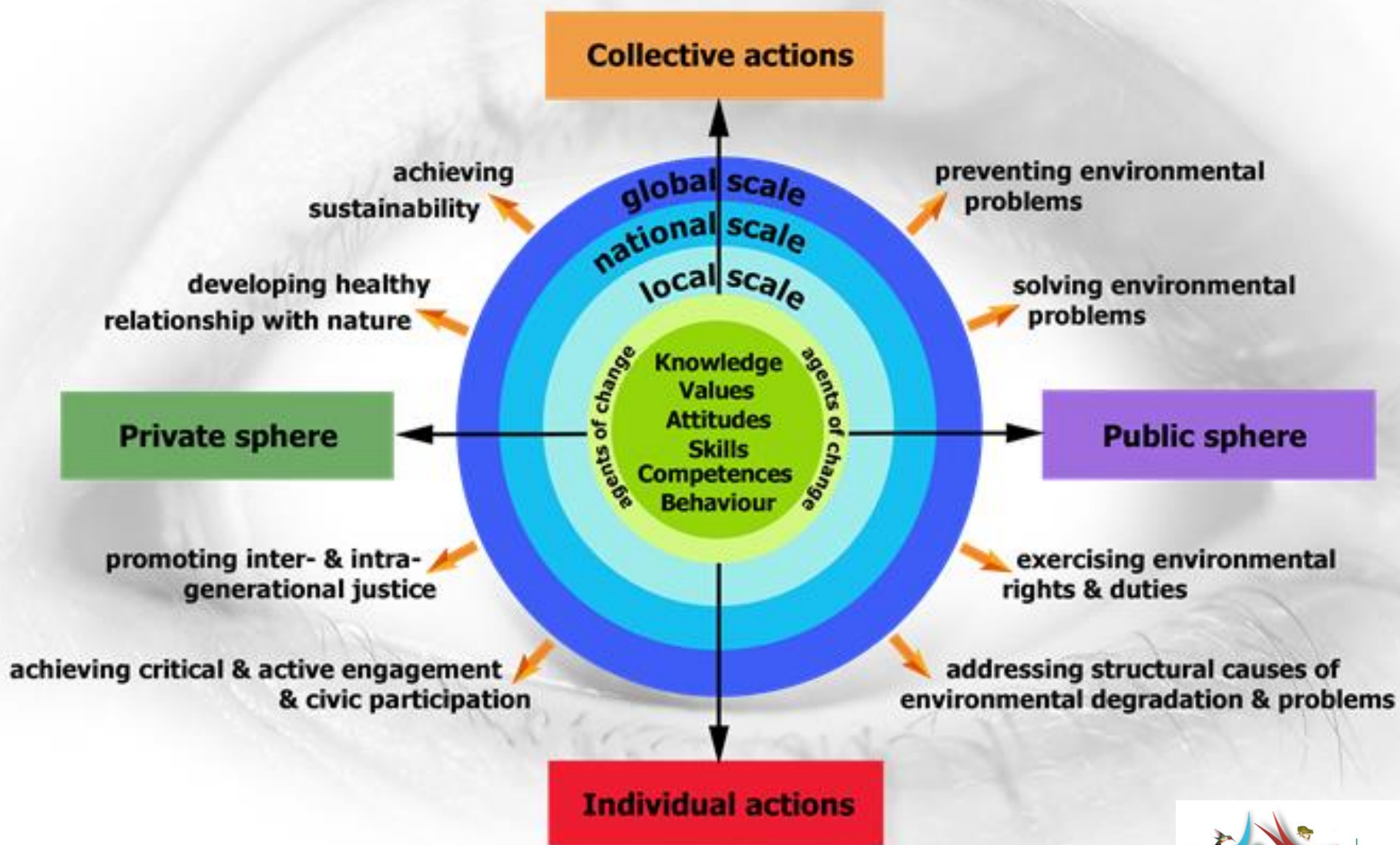
Activities in non-formal settings can provide **innovative alternatives to class-based teaching systems** via personal interaction in problem solving, developing the willingness and the competences for critical and active engagement (*Marcinkowski, 2010*).

Non-formal EE activities have long focused predominantly on **individual change**, particularly attitudinal and behavioral change specific to environmental issues (*Kool, 2012*).

Environmental educators and researchers advocate a need to move beyond a central focus on individual attitudinal and behavioral changes towards **collectively building a better understanding of environmental learning processes aimed at socio-ecological change** (*Orr, 2004*).



# Environmental Citizenship Model





What kind of pedagogies (might)  
build student competencies for  
deep civic participation contributing  
to environmental and social  
change?



Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

Education for Environmental  
Citizenship



**PLACE – BASED EDUCATION**

Expeditionary  
learning

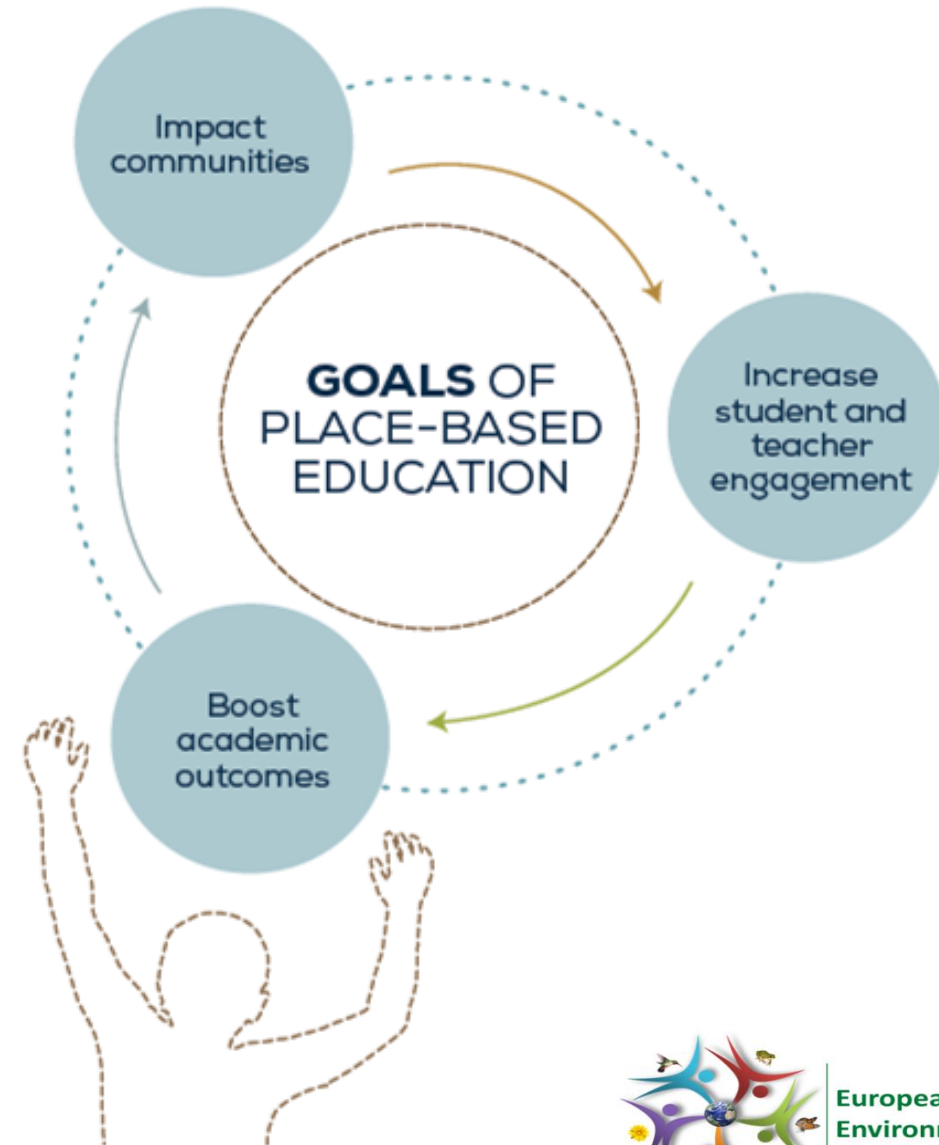
Pedagogy of  
place

Service  
learning



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Place-based education is connecting individuals with their local community and environment such that they see themselves as citizens of their community (Smith, 2007)

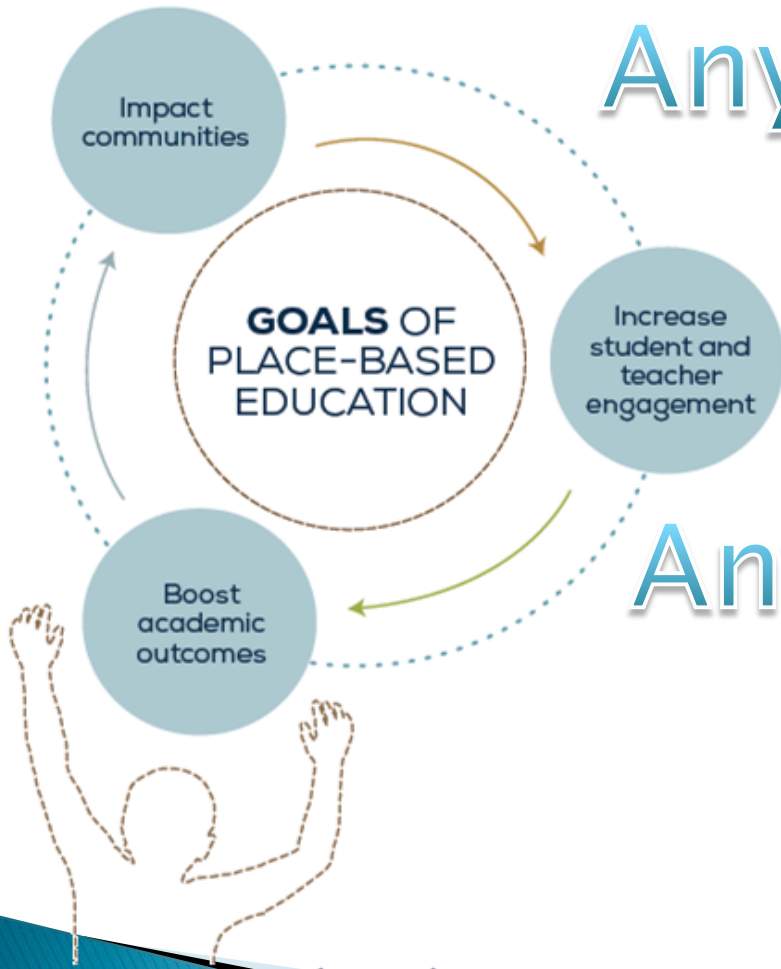




# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Anywhere

## Anytime



## Development sites



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# PLACE-BASED EDUCATION (PBE)

connects learning to communities and the world around us.



Place-based education is connecting individuals with their local community such that they see themselves as **citizens** of their community



Learning is grounded in local communities and authentic contexts



Learning lays the groundwork for civic participation



Students exercise their environmental rights and duties



Students participate in effecting change within their local communities

## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

The most effective way for youth to learn about government politics and practice active citizenship is to engage with public issues at the local level, where they can see democratic processes in action and the effects of their contributions”

*Chawla and Cushing (2007, p.6)*

Place-based education encourages people to think and act as members of the public—not as consumers or producers or private persons, but as citizens who have a stake in maintaining a vital public realm.” *Dagger (2003, p. 41)*



Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Education for Environmental Citizenship



# CIVIC ECOLOGY EDUCATION



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Civic ecology education is one model that merges traditional EE with civic engagement.





## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

**Includes** urban environmental education programs that engage youth to restore urban habitats, voluntarily, incorporating “nature contact” and “democratic deliberation”  
(*Tidball & Krasny, 2010*).

**Adopts** stewardship practices that integrate social and environmental values within a social—ecological systems framework  
(*Tidball & Krasny, 2010*).



**Creates** situated learning in real-life resource-management contexts, enabling an experiential and participatory learning process while also enhancing ecosystem and social health  
(*Light, 2013*).



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## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship



Such a pedagogical approach provides a more compelling framework by which to foster an environmental citizenship **empowering individuals to take part in the democratic processes needed to respond to the sustainability imperative.**



Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

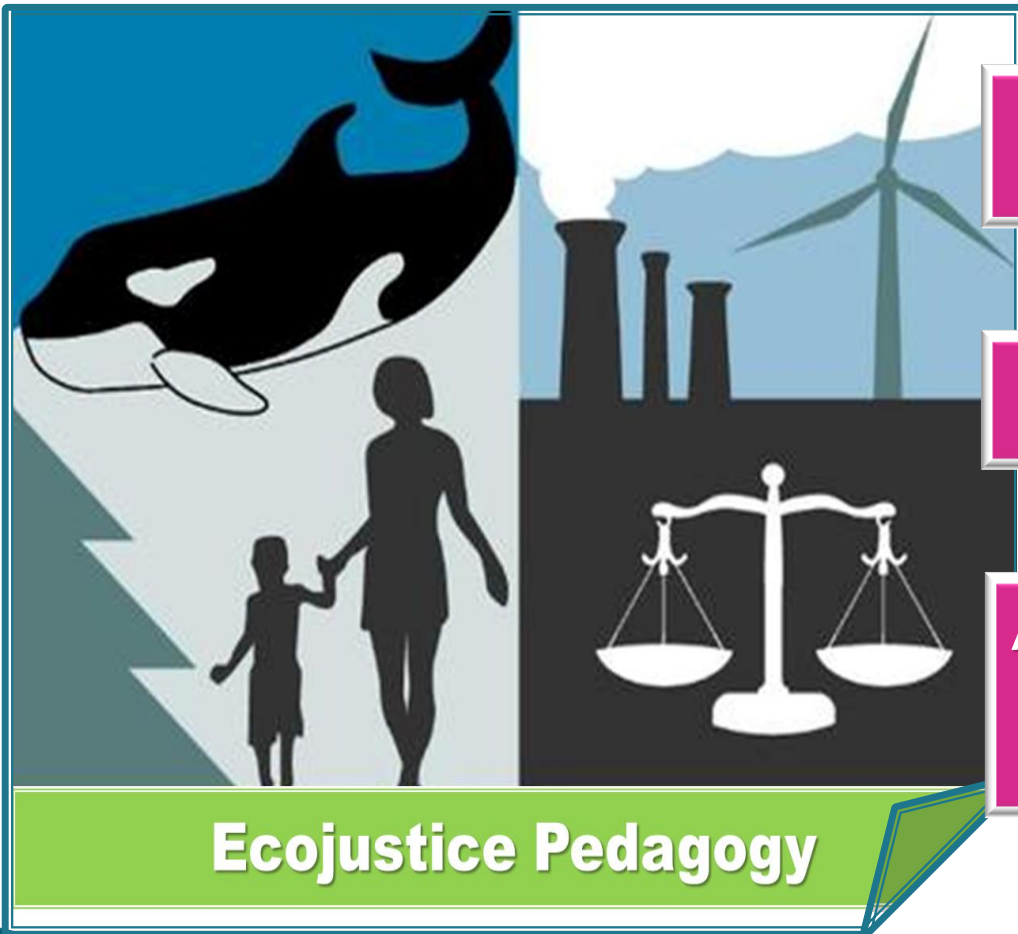
## Education for Environmental Citizenship



# Ecojustice Pedagogy



## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship



Extends values of justice to include the environment  
(*Bowers, 2002*).

Earth has a right to thrive and not be a contingent on the needs of humans.

Analyzes the destructive effects of a worldview organized by a logic of domination, and offers teachers and students ways of responding in their own communities.





**Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship**

**Out-of-  
classroom spaces  
and places**



**Gaining a diversity  
of natural history  
knowledge**

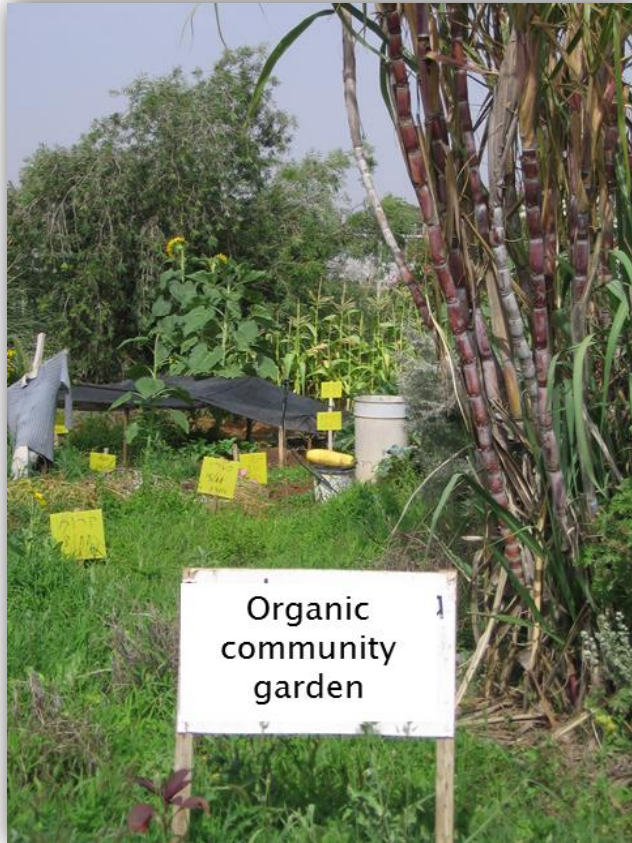
**Experiencing  
the  
knowledges of  
cultural  
relationships  
to place**





# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Community garden





# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Sustainable practices within a school:

Composting, gardening, recycling, solar water heating, greenhouse

Learning how to compost



Growing herbs instead of buying



Student- based recycling





# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Community mapping

What is in our immediate neighborhood?

What sustainable practices are already in our neighborhood?

What possibilities are there for more?





## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

# Education for Environmental Citizenship



# Action Competence



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Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

EE situated in authentic inquiry and action alongside civic engagement is more explicitly appropriate in non-formal settings for cultivating the type of Environmental Citizenship and literacy needed for sustainability (*Berkowitz et al., 2005*).

Aims not to modify specific behaviors like recycling or saving water, but rather engages youth in planning and taking action on environmental issues they find relevant.

It involves shared decision making, which occurs when adults and youth collaborate in planning, implementing, and evaluating a project (*Schusler & Krasny, 2015*).





## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

Several examples of youth environmental action have been documented in educational practice:

- **Physical environmental improvements** (e.g. planting trees to stabilize streambanks; transforming vacant lots into community gardens);





## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

- Community education (e.g. organizing **community information fairs**; producing educational media like newsletters or videos)

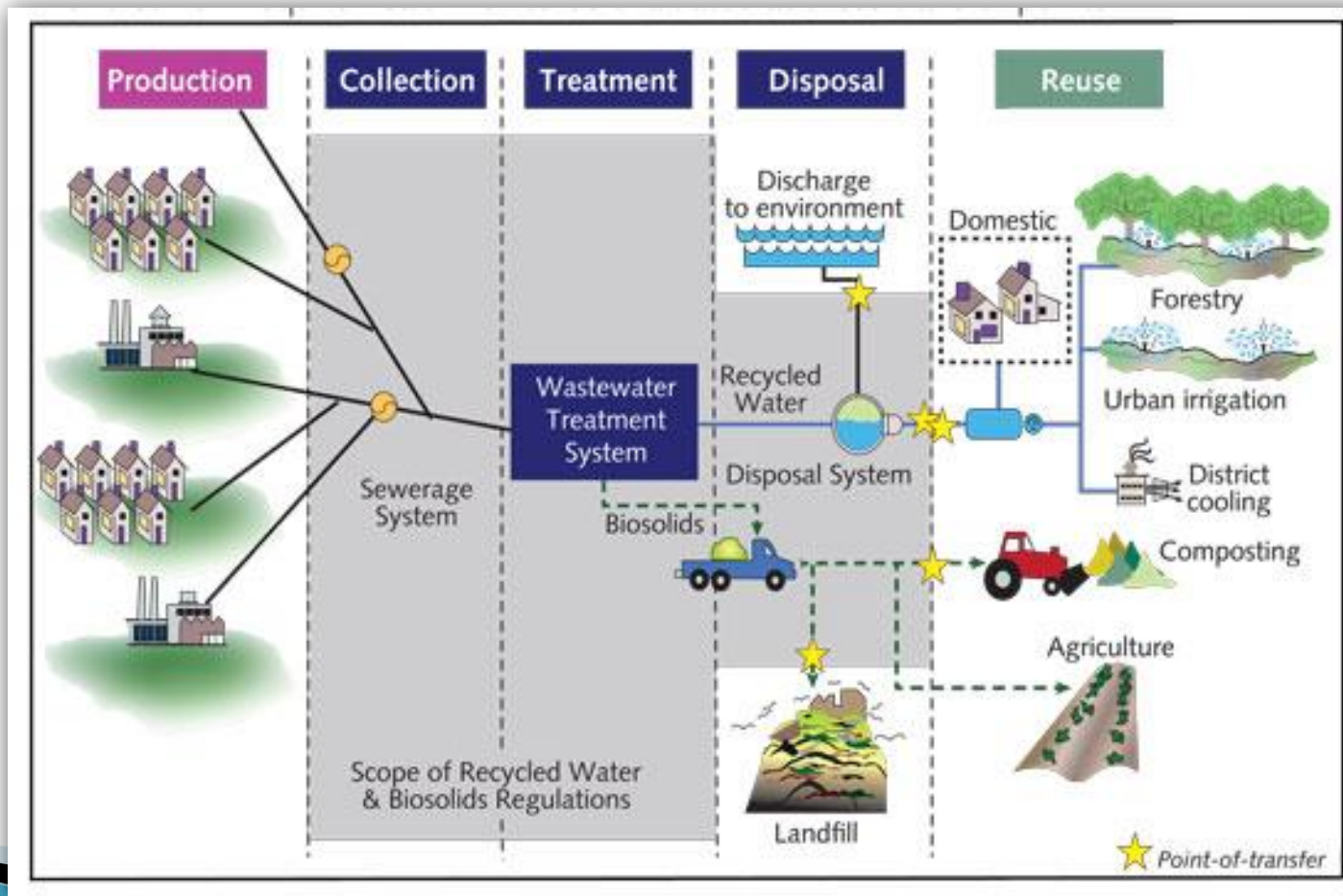






## Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

- Public issue analysis and advocacy for policy change (e.g. researching and analyzing the environmental impacts of on-site wastewater treatment regulations and presenting policy recommendations to a state legislative committee)





# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

- Products or services contributing to community development (e.g. sustainably growing food for sale at a neighborhood farmers market).

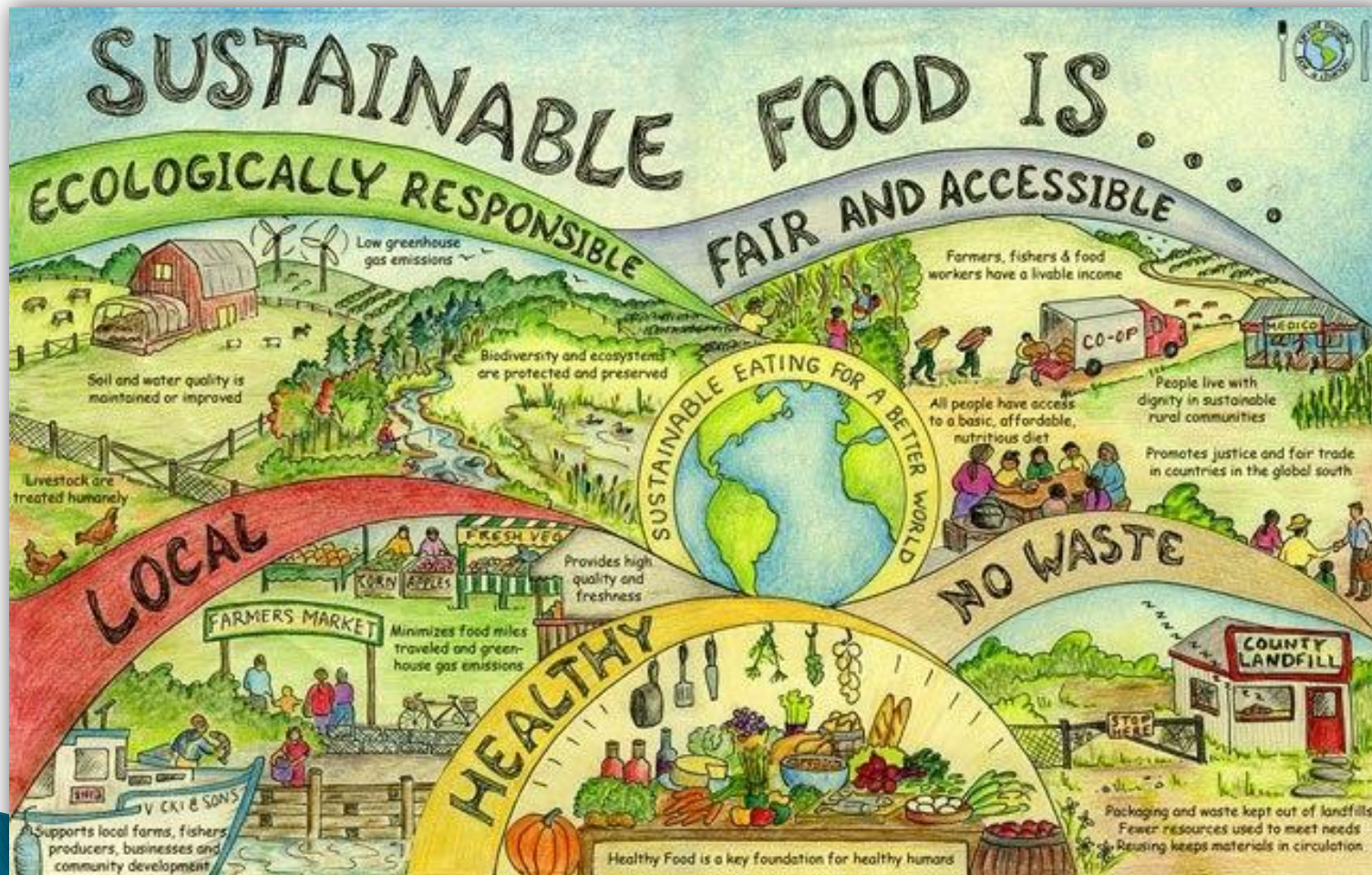




# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Sustainable feast

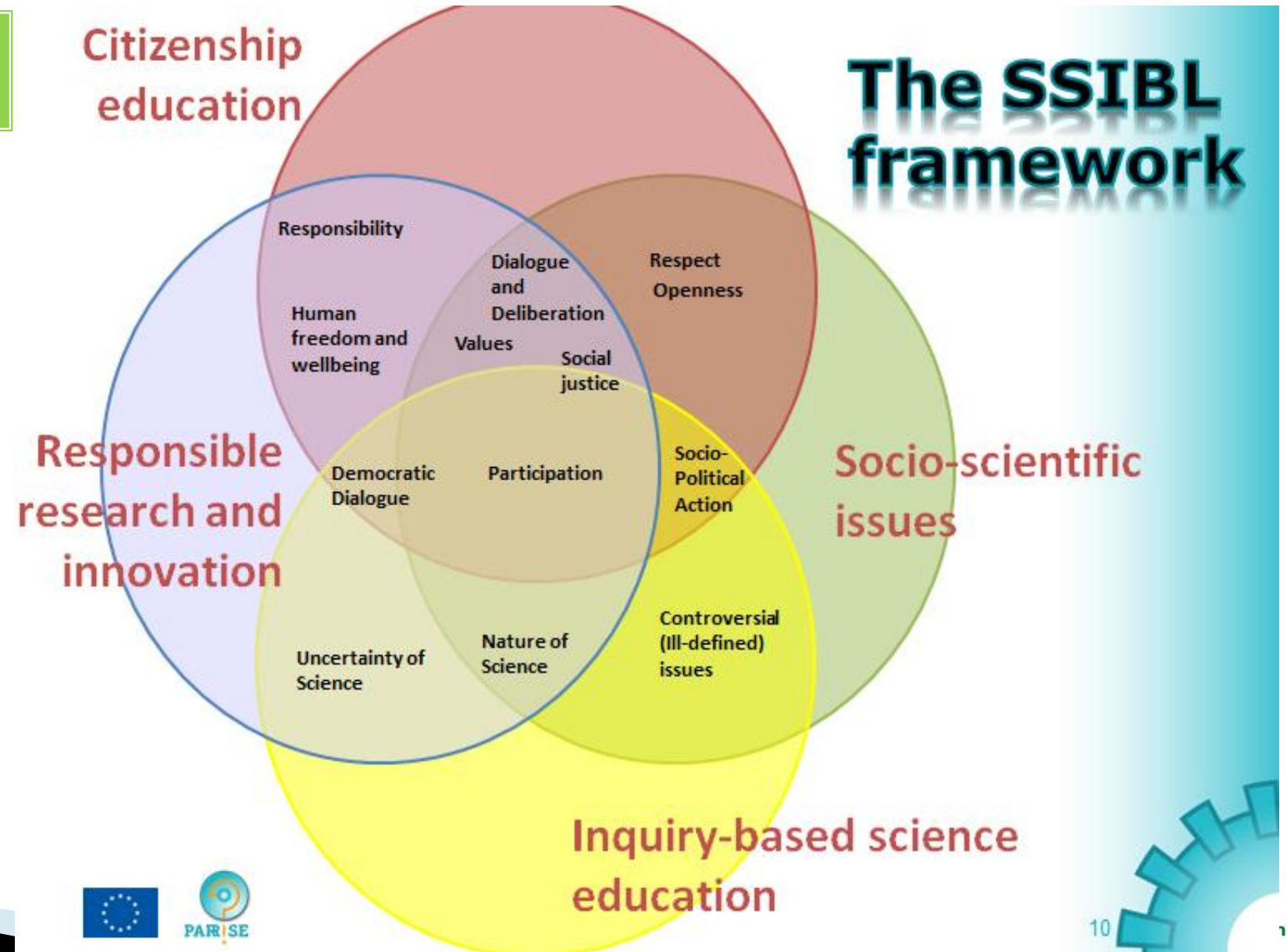
Using food only in season and within 100 Km



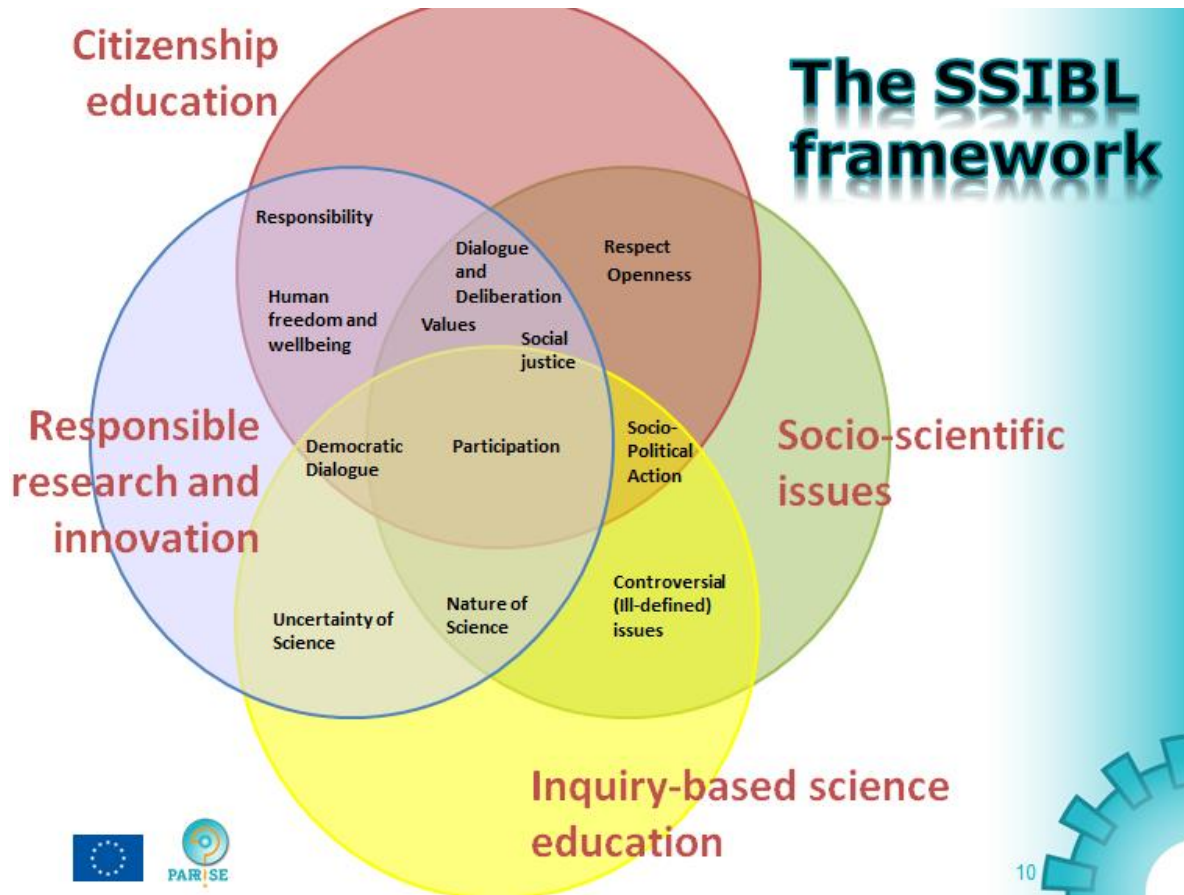


# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship

## Education for Environmental Citizenship



# Pedagogies, teaching tools and learning schemes of secondary non-formal education that could be complementary to formal education in promoting Environmental Citizenship



The SSIBL-approach draws together three interacting pillars

- Inquiry Based Science Education (IBSE)
- Socio-Scientific Issues (SSI) and
- Citizenship Education (CE) –

within the umbrella of Responsible Research and Innovation (RRI).

Bringing together various stakeholders (consumers, interest groups, scientists, policy-makers, business) to produce realistic, balanced and ethically-based outcomes



# Education for Environmental Citizenship Pedagogical Approach



## INQUIRY

- Data Collection
- Structural causes
- Inter- & Intra- generational injustice
- Value clarifications
- Outdoor Activities

## PLANNING

- Stakeholders interested
- Mapping controversy
- Alternative solutions
- Structural resistance
- Risk assessment

## CIVIC PARTICIPATION

- Decision making
- Exercise of Env. Right & Duties
- Actions in community
- Public debates
- Student activism

## NETWORKING

- From local to global
  - Local networks
  - National networks
  - Global networks

## SUSTAIN ENVIRONMENTAL & SOCIAL CHANGE

- Support change
- Adopt
- Integrate to address structural causes
- Reward
- Inform

## EVALUATION & REFLECTION

- Audit
- Measure
- Assess
- Inspect
- Focus



## 23.4 Challenges regarding the secondary age level and the non-formal focus and suggestions for overcoming them

