Towards the alliance for environmental education to achieve SDGs

Takashi Kosaki

Past-President,
International Union of Soil Sciences (IUSS)
Vienna, Austria

and
Faculty of International Communication,
Aichi University,
Nagoya 453-8777, Japan
(kosakit8@vega.aichi-u.ac.jp)
Were born at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012 to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing our world.
Aims to **conserve** and **restore** the use of **terrestrial ecosystems** such as forests, wetlands, drylands and mountains by 2020.

**Targets**

- By 2020, ensure the **conservation, restoration and sustainable use** of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
- By 2030, **combat desertification, restore degraded land and soil**, including land affected by desertification, drought and floods, and **strive to achieve a land degradation-neutral world**
52% of the land used for agriculture is moderately or severely affected by soil degradation.

Due to drought and desertification, 12 million hectares per year (23 hectares per minute) are lost.

74% of the poor are directly affected by land degradation.

It is obvious that soil health is necessary for sustainable life!!

But... Who knows?
Question: Do you like to know about soils?
### Why it happened?

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Hirai et al. (2011)
Life and Earth (Science)

(1) Germination, growth and fruiting
a. Plants germinate using nutrients in their seeds.
b. Plants need the sun and the fertilizer when they germinate.
c. Germination is affected by moisture, air and temperature.
d. Plant growth is affected by sunlight and fertilizer.
e. Pollination results in fruiting.

(3) Runoff water
a. Runoff water erodes land and transports stones and soil.
b. Stones in upper stream are different in shape and size from those in lower stream.
c. Rain intensity determines the speed and amount of flowing water.

Even ONE, it helps a lot!
Question: Do you like to know about soils?

As much as
Some
Never

Hirai and Hirai (2014)
Good start is ....
Efficient target is ....
Soil and environmental education program for school kids and their parents and all laymen.
--- Jointly with national/regional societies, museums of Natural History, universities, agricultural research centers, schools, private companies, etc.

Taking them out of doors: observation of soil profiles and making miniature monoliths
In the lab:
Major Activities of IYS

Mobile: Soil Museum
Textbooks, videos, games, etc. for children, students and teachers
Introductory topics for elementary school children

Let's sniff soils smell!

What color here? And there?
Middle-level topics for high school students

**Soil biology**

**Hand sorting**

**Tullgren funnel procedure**
Advanced-level topics for school teachers

Monoliths preparation
Contents are unique and diverse, but area-, nation-, regional-specific thus not easy to approach policymakers.
We need alliance with simple and standardized protocols in environmental education to approach policymakers for their better understanding “soil matters”.
Platform is ISC