Summary Report on ICED2019 Workshop on Design for Global Sustainable Development
Challenge definitions and actions developed during the workshop

In the following slides we have color-coded the challenge definitions and actions developed during the workshop according to four overarching themes:

• Design and systems approaches for complex system contributing to the SDG’s
• Co-designing design education for sustainable development
• Efficient resource usage/low tech development
• Sustainable product-service design methods and tools

The four themes are based on our clustering of the topics of interest that each workshop participant delivered.
What can we, as a design community, learn from and contribute to when it comes to... Design and systems approaches for complex systems contributing to the SDG’s

Florian Bratec
Melissa Greene
Torben Beernaert
Aria Collopy
Christopher Mattson
Eckart Frankenberg
Erin McDonald
Flore Vallet
John Clarkson
Matteo Vigwoil
Phillip Stevenson
Tatioana Bratec
What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to...

Design and systems approaches for complex system contributing to the SDG’s

Design a way for people to co-develop their healthcare system in/at local community level to better serve people in the communities
Design a way for people headed to places other than home in/at leaving work to better carpool/take public transportation, leave car at home in the morning.
Design a way for local communities and researchers in/at developing nations to better integrate conservation and development goals.
Design a way for shareholder/farmers in/at the Amazon to better process their crops/sustainably use their natural resources.
Design a way for people to co-develop their healthcare system in/at local community level to better serve people in the communities
Design a way for people in/at dry regions to better obtain water.
Design a way for children in/at places with nutrition issues to better obtain the right amount of vitamins and nutrients
Design (to be redefined) a way for local people with high diversity in/at small town or village in rural context to better life for them (to be defined with them) under highly constrained economic, environmental context.
Design a way for life in/at our world to better live
Design a way for caregivers in/at daycare/rehabilitation centres to better communication (social-psychological challenges) with their carereceivers (active, involved, inclusive, motivating)
Design a way for rural people in/at Botswana (Africa) to better eradicate poverty
Actions

Mobility actions (ex. Sao Paolo)

- Understand transportation patterns (journey mapping, surveying, GPS data, lead users)
- Digital driver board
- Algorithmic challenge (matching riders and drivers)
- Timing and flexibility of schedule
- Globally reducing travel but liberty/freedom to move freely to enhancing communication
- Psychological travelling w. people they do not know
- Group sharing - relationships, conversations that happen in cars
- Rewards, incentives
- Where is the responsibility?
- Understand rebound effects in transportation
- Understand impact
What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to...

Co-designing design education for sustainable development

Alexander Komashie
Amer Etoji
Giulia Wally Sourati
Gwenola Yannou - le Bris
Kate Bissett-Johnson
Marianna Coulentianos
Yuki Taoka
Yvonne Eriksson
What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to...  

Co-designing design education for sustainable development

**Design a way for** students in/at places without internet/isolated places **to better** access knowledge/connect with the world.

**Design a way for** teachers in higher education, researchers, students in/at how to create a sustainable way to teach/conduct research **to better** contribute to a sustainable society.

**Design a way for** young (inexperienced) engineers in/at manufacturing roles **to better** understand the sustainability impact of design decisions.

**Design a way for** students, educators, researchers in/at university or industry-sponsored design projects (resource sponsors) **to better** implement lasting impactful designs (resource needs).

**Design a way for** children/teenagers in/at primary schools/schools **to better** understand the nature and its problems/concerns.

**Design a way for** experts (professors or engineers) in/at specific domain (eg innovation, sustainable design etc.) **to better** connect and communicate about the different matter of this specific domain (knowledge sharing).

**Design a way for** environmental oriented people; students; users in/at participative allies **to better** define their environmental life; develop practices.

**Design a way for** HIC and LMIC partners in/at both Europe and Africa **to better** understand a more holistic way of addressing the SDGs.

**Design a way for** students/graduates in/at global sustainable development curriculum **to better** find jobs where they can apply these skills.

**Design a way for** innovations in/at universities **to better** get implemented and achieve impact.

**Design a way for** students/graduates in/at global sustainable development curriculum **to better** find jobs where they can apply these skills.

**Design a way for** innovations in/at universities **to better** get implemented and achieve impact.

**Design a way for** students who studies engineering in/at university East Timor (where resources are limited) **to better** design and implement solutions toward local problems in the country.

**Design a way for** for a local public authority, techno-economical scenarios of building waste treatment in/at a pilot site **to better** treat waste in local/ ecological waste treatment value chain in a circular economy perspective.

**Design a way for** students employment in/at Botswana (Africa) **to better** increase the employment opportunities.

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**Note:** The provided text has been formatted to improve readability and structured for easier consumption.
Actions

Challenge: Educating (*new definition: enabling change*) the society – continuous training in University +

- To make a study on local needs/problems/challenges
- Identify actors that could be in interaction
- Develop programmes/goals for the education both for children and adults
  - Identify context
    - Family context
    - Parents
  - Explore needs
    - Children, Professionals
  - Develop program and test
    - For children and professionals
    - Interaction with stakeholders
  - Review
What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to...

**Efficient resource usage/low tech development**

<table>
<thead>
<tr>
<th>Chris McMahon</th>
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<tbody>
<tr>
<td>Cluzel France</td>
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<td>Henu Boptiste</td>
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<td>Katharina Helten</td>
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<td>Tim McAloone</td>
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<td>Troussier Nadigl</td>
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<td>Vincenzo Ferrero</td>
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What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to... Efficient resource usage/low tech development

**Design a way for** families *in/at* neighborhoods to better share low use products (such as lawn equipment).

**Design a way for** 1. Western countries, 2. Manufacturing firms *in/at* 1. the so called “developed world” 2. the whole world to better 1. learn from so called “developing economies” about satisfaction and value creation and 2. manage decoupling value creation activities from resource consumption.

**Design a way for** families and small communities *in/at* locations that are ramping up their electrical energy use to better use materials in the devices that they use.

**Design a way for** society (everyday users) *in/at* using consumer products to better understand the resources that they are wasting in that particular moment of use.

**Design a way for** society in full as well as individual consumers *in/at* the “consumption society” to better address the problem of resource consumption (radically change the consumption itself “how/what”)

**Design a way for** versatile product development *in/at* local stage to better use of ever produced (2:nd hand) products/pieces

**Design a way for** local mining companies *in/at* developing countries to better extract scarce materials from mining and re-use, recycle minerals and metals instead of extracting raw material
**Actions**

**Resources – reducing needs**

- Sharing
- Make more durable
- Frugal engineering – focus on function – “good enough” - be satisfied with simpler
- Make it easier to recycle – disassembly; modularity and standards
- Avoid downcycling + dispersion
- Reduce consumable use in use phase
- Multi-functional modular design...reuse of modules...
- Reducing technical and marketing obsolescence e.g. slow fashion
- Change industry offering
- Use natural material
- Efficiency vs effectiveness
- Move to PSS...whole life responsibility
- Industrial ecology

**Resources on resources**

Amory Lovins ...factor 4
Julian Allwood...with both eyes open
Philippe Bihouix... the future of metals (in french)
What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to... **Sustainable product-service design methods and tools**

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<th>Harrisson Kim, Illinois</th>
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<tr>
<td>Lars Almefelt</td>
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<td>Renan Liguneira</td>
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<td>Santosh Maurya</td>
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<td>Sophie Hallstedt, Sweden</td>
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<td>Srinath Doss</td>
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<td>Ting Liao</td>
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What can we as a design community learn from and contribute to from collaborating in a global development context when it comes to...

**Sustainable product-service design methods and tools**

**Design a way for** co-design teams *in/at* a global setting (diverse people from various places on one team) *to better* understand and work with the local power/politics dynamic.

**Design a way for** engineers *in/at* local communities *to better* relate to user scenarios/needs

**Design a way for** self empowerment of local communities through co-design *in/at* a culturally relevant manner (global setting) *to better* address issues of poverty (water/food/security/health/education…) *in* developing countries

**Design a way for** co-designing with stakeholders (per lifecycle phase) e.g. user scenarios *in/at* understanding their needs (requirements, wish) *to better* develop concepts which are solutions and to evaluate their life cycle impact.

**Design a way for** people who needs prosthetic legs *in/at* India (developing countries) *to better* walk experience

**Design a way for** heater for household day-to-day use (cooking, heating) *in/at* setting where there is no electricity readily available *to better* help to use heat (solar capture) for storage and cooking/heating (there are products available)

**Design a way for** farmers *in/at* rural areas *to better* connect with technology to increase the production.
Actions I

**Form a co-design team**
- Establish common rules
- Establish (simple) methods
- Build trust
- Establishing ownership
- Sharing of information
- Capture/store/reuse information
- Standard for sharing outcomes/results
- Clarify roles
- Finding the right stakeholders
- Financing co-design teams
Actions II

Farmers challenge in Africa
Goal: To increase production by technology
Step 1: Understand needs
Step 2: Understand constraints
   Available infrastructure; information; Level of knowledge of end-users (farmers)
Step 3: Understand contexts (technologies, practices...)
Step 4: Explore sensor technologies to predict climate condition
Step 5: Develop database to recommend seeds for distributors of seeds