IDDS 2017: Hogares Sostenibles
Final Data Summary

2 Weeks  |  45 Participants  |  8 Prototypes

June 4th – 20th
Sololá, Guatemala
Who are the participants?
Who are the participants?

Gender
- Males: 38%
- Females: 62%

Citizenship
- Guatemala: 69%
- Spain: 7%
- United States: 7%
- Brazil: 2%
- Colombia: 5%
- El Salvador: 2%
- New Zealand: 2%
- Honduras: 2%
- Germany: 2%
- Holland: 2%

N = 45

Who are the Participants?
- Local: 12
- National: 19
- International: 14

What did they achieve at IDDS?

What will they do next?
Who are the participants?

- **Education Level**
  - Undergraduate: 48%
  - Primary / Secondary: 26%
  - Graduate: 26%

- **Average Age:** 28
- **Youngest:** 20
- **Oldest:** 58

- **Profession**
  - Industrial Design: 18%
  - Weaver: 13%
  - Architecture: 11%
  - Chemical Engineering: 7%
  - Agroforestry / Environmental Engineering: 7%
  - Service Design: 4%
  - Higher Education & Administration: 9%
  - Agriculture: 4%
  - Alma de Casa: 7%
  - Other: 13%

Who are the Participants?  
What did they achieve at IDDS?  
What will they do next?

(N = 45)
What are their short-term goals?

<table>
<thead>
<tr>
<th>Goal</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn more about myself as an individual</td>
<td>4</td>
</tr>
<tr>
<td>Further develop a project I have already been working on</td>
<td>4</td>
</tr>
<tr>
<td>Produce a project that I can keep developing after the summit</td>
<td>24</td>
</tr>
<tr>
<td>Come up with an innovative idea to solve a problem</td>
<td>14</td>
</tr>
<tr>
<td>Interact with local communities in a meaningful way</td>
<td>22</td>
</tr>
<tr>
<td>Join a strong network of innovators</td>
<td>27</td>
</tr>
<tr>
<td>Meet and work with people from other cultures</td>
<td>21</td>
</tr>
<tr>
<td>Learn to facilitate the design process</td>
<td>19</td>
</tr>
<tr>
<td>Learn strategies for effective co-creation through teamwork</td>
<td>24</td>
</tr>
<tr>
<td>Learn more about sustainability challenges and opportunities in Guatemala</td>
<td>15</td>
</tr>
<tr>
<td>Develop or improve my building/construction skills</td>
<td>6</td>
</tr>
<tr>
<td>Develop or improve my design skills</td>
<td>12</td>
</tr>
</tbody>
</table>

45 Respondents
What are their long-term goals?

What do you MOST hope to accomplish in the 12 months after IDDS?

45 Respondents

- Work on an innovation or venture: 11 respondents
- Start a new job/internship in the design or sustainability fields: 17 respondents
- Bring new collaborative design techniques into my work: 18 respondents
- Teach what I have learned about design and co-creation to others: 26 respondents
- Get involved with a local community of designers or IDDS alumni where I live: 24 respondents
- Engage in further study or research about design, sustainability or development: 22 respondents
- Other: 2 respondents
What were their favorite activities of IDDS?

1. Morning Circle
2. Build-Its
3. Session: Introduction to the Design Process
What did they create?: The Prototypes
Team Water: Nim’ Ya

Addressing the issue of insufficient water supply and unequal distribution of water in Santa Catarina, the Water team created a water catchment and storage system named “Nim’ Ya”.

Attaching to the roof of any home, Nim’ Ya uses a PVC tube to collect water run-off, which is later run through a series of filters before entering a large storage system. Through a faucet attached at the base of the storage barrel, water can be easily extracted without leaving the container open, preventing contamination of water.
Team Organic Waste: Ciclo Rotatario

Addressing a lack of efficient use of organic waste in Santa Catarina, the Organic Waste team developed “Ciclo Rotatario”, a rotating barrel that can be used to create compost from organic materials. Fit with a small drainage system as well, this prototype allows for ideal conditions for creating compost. Future plans include creating separate compartments which allow for several batches of compost to be created simultaneously.

The team also used educational posters to inform community members of what can and cannot be included in compost components.
Team Sanitation: Ecosan

Team Sanitation addressed a lack of sufficient sanitary conditions in many bathrooms throughout the community. A majority of homes in Santa Catarina (600 of 800) are not connected to the town’s waste treatment plant, resulting in human waste either entering the nearby Lake Atitlán or contaminating household land.

Ecosan is a latrine that separates liquid and solid waste, allowing for the potential to use solid waste to create fertilizer. Additionally, Ecosan has a water catchment system that collects rainfall for hand washing in an enclosed container. This structure was coupled with an educational lesson and modeling station for children, teaching safe sanitary practices.
Team Food: Huertos Familiares

Team Food addressed a lack of proper nutrition in the community, along with an abundance of unused vertical space on home exteriors.

Using PVC pipes, “Huertos Familiares” is the creation of vertical home gardens that can be hung throughout the community. Growing nutritious and useful foods, families can increase their nutrient intake while easily growing from the comfort of their home. Team Food also created educational cards that came with the Huertos Familiares kit, that contain information regarding necessary amounts of food and water for the plant, as well as recipes and contained nutrients!
Team Energy: Quemador para Tuj

Team Energy created an alternative heating system for the temezcal, a traditional sauna-like structure that is used for bathing in Santa Catarina. Previously heated solely through open flame, temezcals contain smoke that can be dangerous and irritating to lungs and eyes. Through rocket-stove technology, “Quemador para Tuj” heats up more quickly, using less firewood and emitting close to zero smoke.

Additionally, the Energy team created an educational campaign promoting the use of LED lightbulbs. Although initially more expensive to purchase than incandescent bulbs, they are more efficient and result in lower monthly bills. Through this campaign and active selling of LED bulbs, the team hopes to decrease energy costs for families.
Team Plastic Waste: Natz’ Uk

Team Plastic Waste found a creative way to recycle unwanted plastics. Currently in Santa Catarina, there is no waste separation, and all garbage (including plastics) is brought to a nearby dump.

“Natz’ Uk” uses a metal mold that can be filled with cut strips of plastic bags. By placing the mold next to the household stove, recycled plastics inside reach temperatures high enough to melt. This plastic waste is then transformed into sturdy panels that can be connected to create furniture and more! Connectors either made of screws and plastic triangles or tubing and plastic bottle caps allow for easy fastening. Natz’ Uk includes a guide, filled of ways to repurpose old household plastics, and instructions for creating a handheld PET bottle stripper!
Team Cookstoves #1: Briqueta Palopó

One of two Cookstoves teams addressed a need for an alternative fuel in Santa Catarina. Nearly all households in the community use firewood as their primary source of fuel, creating an unsustainable situation. Collecting firewood is a strenuous household chore for many in the community, requiring several hours per week on the mountainside. Damp conditions affect the quality of firewood, leading to some families turning to burning plastics to heat their stoves (having negative effects on both health and the environment).

Using candle wax, sawdust, corn husks, corn cobs and pine leaves, Briqueta Palopó serves as an alternative source of fuel that heats to the same temperature as firewood, and lasts even longer! These briquettes do not emit harmful toxins into the environment as do firewood, allowing for cleaner air and easier breathing conditions as well.

With hopes of creating a successful enterprise, community members from various teams are learning to create the briquettes, and hope to bring them to market both in Santa Catarina and in other communities around the lake.
Team Cookstoves #2: Chaparra Redonda

A second Cookstoves team recreated the cookstove itself, using feedback and ideas of local community members. The round shape of “Chaparra Redonda” is not commonly found in the community, although it is a much preferred style for traditional cooking.

Using technology similar to that of a rocket stove, Chaparra Redonda allows for more efficient heating, and requires less fuel than other cookstoves. Using two separate heating compartments, users can choose whether to heat the entire stove, or just one portion, also allowing for more conscious fuel usage. Cookstove materials are also less absorbent of heat, allowing nearly all of the heat produced to be concentrated in the stovetop.
Achievements: Do you feel that you have accomplished any of the following? (Select all that apply)

- Learn more about sustainability challenges and opportunities in Guatemala (40)
- Meet and work with people from other cultures (39)
- Produce a project that I can keep developing after the summit (37)
- Interact with local communities in a meaningful way (36)
- Join a strong network of innovators (35)
- Learn strategies for effective co-creation through teamwork (35)
- Develop or improve my design skills (33)
- Generate an innovative idea to solve a problem (30)
- Learn to facilitate the design process (29)
- Develop or improve my building/construction skills (18)
- Further develop a project I have already been working on (14)
- Learn more about myself as an individual (0)

45 Respondents
Value of IDDS Hogares Sostenibles

What aspects of the IDDS Experience have been the most valuable to you?

- Engaging with the Community: 26 responses
- Learning about local cultures: 19 responses
- Co-creation and collaborative problem solving: 19 responses
- Working with diverse and interdisciplinary teams: 16 responses
- Learning and practicing the design process: 12 responses
- Building Connections with the IDDS community through shared experiences: 10 responses
- Developing a project: 9 responses
- Acquiring new skills: 9 responses
- Personal growth: 8 responses
- Professional Growth: 6 responses

Coded Responses (44)
Growth in Knowledge & Skills

What skills and/or knowledge have you gained in the last two weeks?

- Technical/Building Skills: 21
- Design Skills: 18
- Teamwork: 15
- Co-creation: 13
- Knowledge of summit-specific sector: 11
- Self Learning: 10
- Knowledge of local culture/context: 9
- Community engagement skills: 8
- Communication Skills: 7
- Business development: 0

Coded Responses (44)

Who are the Participants?
What did they achieve at IDDS?
What will they do next?
Have your attitudes or perspectives changed in any way in the last two weeks as a result of participating in IDDS?

**Self-Awareness**
- Improved cross-cultural understanding / Empathy: 13
- Increased self-confidence: 11
- Improved understanding of local culture/context: 9
- Increased appreciation for connecting with communities: 9
- New perspective on social impact: 9
- Inspiration to take action: 8
- Better understanding of the design process (iteration, failure,...): 8
- Increased appreciation for working in a team: 6
- Ability to creatively use local materials: 1

Coded Responses (44)
**Changes in Confidence Levels**

How confident do you feel doing the following activities? (before vs. after IDDS)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building things with wood, metal and other materials</td>
<td>3.42</td>
<td>4.16</td>
</tr>
<tr>
<td>Working in diverse teams</td>
<td>4.29</td>
<td>4.51</td>
</tr>
<tr>
<td>Gathering information and feedback from community members</td>
<td>3.76</td>
<td>4.53</td>
</tr>
<tr>
<td>Clearly defining and framing a problem</td>
<td>3.84</td>
<td>4.22</td>
</tr>
<tr>
<td>Creating a solution with users (co-creation)</td>
<td>4.31</td>
<td>4.42</td>
</tr>
<tr>
<td>Working resourcefully with locally available materials</td>
<td>3.78</td>
<td>4.42</td>
</tr>
<tr>
<td>Living and working in an unfamiliar environment</td>
<td>4.02</td>
<td>4.60</td>
</tr>
<tr>
<td>Designing for sustainability</td>
<td>3.66</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Who saw the most growth?

- Local
- National
- International

Due to starting higher confidence levels amongst international participants

Scale of 1-5, 1 = Uncomfortable, 5 = Very Comfortable

45 Respondents
What will they do next?
After IDDS: Now that you’ve completed IDDS, what are your primary goals in the next 12 months?

<table>
<thead>
<tr>
<th>Goal</th>
<th>Post IDDS</th>
<th>Before IDDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach what I have learned about design and co-creation to others.</td>
<td>32</td>
<td>26</td>
</tr>
<tr>
<td>Get involved with a local community of designers or IDDS alumni</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>where I live.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engage in further study or research about design, sustainability or</td>
<td>25</td>
<td>22</td>
</tr>
<tr>
<td>development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bring new collaborative design techniques into my work.</td>
<td>18</td>
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<tr>
<td>Work on an innovation or venture.</td>
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<td>17</td>
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<tr>
<td>Start a new job/internship in the design or sustainability fields.</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Who are the Participants?

What did they achieve at IDDS?

What will they do next?

[Image of bar chart comparing goals before and after IDDS]
How do you plan to continue working on your IDDS project in the future?

- I plan to actively continue developing the project. 60%
- I will stay in touch to check up on progress, but I will not work on it actively. 38%
- I have no plans to continue with this project after IDDS. 2%

45 Respondents
Interest in Continued Engagement with Guatemala IDIN Chapter

Who are the Participants?

What did they achieve at IDDS?

What will they do next?

N = 42
How can we improve IDDS?

Curriculum

1. Fully Utilize/Explain Design Book

Projects

1. Provide More Support for Continuity/Next Steps
2. Include More Time to Prototype/Iterate Designs

Community

1. Address Language Barrier
2. Clarify IDDS Role in Community
3. Improve Community Member Integration
Since the summit...
### Top Priority Themes

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Cooking**            | 39.1%      | Women ranked cooking #1 with 41.7% of responses.  
                          |            | Men ranked cooking #2 with 19% of responses.     |
| **Energy**             | 7.6%       | Women ranked energy #4 with 8% of responses.       
                          |            | Men ranked energy at #5 with 4.6% of responses.   |
| **Water**              | 23.4%      | Women ranked water #2 with 22.1% of responses.    
                          |            | Men ranked water #1 with 33.3% of responses.      |
| **Food**               | 6.5%       | Women ranked food #5 with 7.4% of responses.       
                          |            | Men ranked food tied in last with 0% of responses.|
| **Firewood Alternative**| 11.4%     | Women ranked alternative fuel #3 with 12.3% of responses. 
                          |            | Men ranked fuel tied at #5, with 4.8% of responses.|
| **Hygiene & Bathrooms**| 4.9%       | Women ranked hygiene /bathrooms #6 with 3.6% of responses. 
                          |            | Men ranked hygiene tied at #3 with 14.3% of responses.|
| **Organic Waste**      | 2.7%       | Women ranked organic waste tied at #8 with 1.8% of responses. 
                          |            | Men ranked organic waste #4 with 9.5% of responses.|
| **Plastic Waste**      | 3.3%       | Women ranked plastic waste tied at #8 with 1.8% of responses. 
                          |            | Men ranked plastic waste tied at #3 with 14.3% of responses.|
| **Temezcal**           | 1.1%       | Women ranked temezcal last with 1.2% of responses. 
                          |            | Men ranked temezcal tied in last with 0% of responses. |
Are you interested in becoming involved with the Hogares Sostenibles initiative?

Yes, 89%

No, 11%

If “No”, Why Not?

- Time: 43.50%
- Lack of Childcare: 13.00%
- Old Age: 21.70%
- Health: 13.00%
- Work: 8.70%
Desired Skills: What type of things would you like to learn?

- Woodworking: 16.0% of respondents
- Painting: 20.2% of respondents
- Welding & Metalwork: 4.3% of respondents
- Electronics: 12.3% of respondents
- Ceramics: 37.4% of respondents
- Cooking: 68.7% of respondents
- Gardening: 33.1% of respondents

163 Respondents
Individuals were able to select all that applied to their interests.
Spotted!
Local Innovations
Thank You! | ¡Muchas Gracias! | Matiox!