Goal

We are creating an open source enterprise model that can be used by individuals and communities to establish industrial economies from low grade, abundant, local resources, and provide a standard of living comparable to that which modern society has achieved. This is a workable solution to unemployment, poverty, and to the problem that a sizeable portion of society depends on government support for their survival, because we train people to create industry, without the need for large amounts of up-front capital, and provide for their own needs, as individuals and as communities.

Activities

We are a network of farmers, engineers, and supporters engaged in creating the Global Village Construction Set (GVCS), a low-cost, high-performance, open-source, do-it-yourself platform that allows for the easy fabrication of the 50 industrial machines it takes to build a small civilization. The GVCS includes machinery, equipment, tools, components, and other infrastructure for creating a complete economy: food, fuel, energy, building materials, transportation, and fabrication.

For each machine, we undergo three rounds of prototyping and field-testing, and include the following documentation: (1) design rationale; (2) 3D CAD files; (3) 2D fabrication drawings; (4) CAE analyses; (5) CAM files (where applicable); (6) exploded parts diagrams; (7) bills of materials and sourcing information; (8) scaling calculations; (9) A-Z instructionals; and (10) cost and performance comparisons to industry standards. All documentation is openly available on our website, along with high-quality video tutorials showing how to fabricate the machinery. The website also includes a community-developed wiki, online forum, and blog which are incorporated into our distance training program that facilitates the global adoption of our open source enterprise model.

To summarize, our work is to openly design, prototype, field-test, and document the processes for creating modern industrial machinery, and, in turn, a fully functioning economy. The central principle that guides this effort is that training others to do the same, and inviting them to improve our methods at any and every level, will lead to the establishment of some of the most effective solutions to global poverty ever conceived of and implemented.

Outputs

By this year's end, we will deliver the OSE Christmas Gift to the World: (1) product releases of the Tractor, Compressed Earth Brick Press, Soil Pulverizer, and Hydraulic Power Unit, having completed three prototypes for all these machines; (2) thorough documentation of these four tools to make replication a straightforward reality; and (3) extensive field testing of this equipment to demonstrate efficient, high-performance construction techniques with these tools within the context of building our training facility infrastructure. Please refer to 2011 TED Fellow Dr. Marcin Jakuboski's recent presentation[1] and the Open Source Ecology[2] website to view videos of our production and testing of these machines.

[1] http://www.ted.com/talks/marcin_jakubowski.html
[2] http://opensourceecology.org/

By the end of the coming year, we will finish creating the Global Village Construction Set, and each machine will come with the previously mentioned documentation and fabrication videos. The following year will mark the beginning of the process of testing the equipment's effectiveness in generating a local economy. The overarching goal is to develop methods for providing for a community's needs, while creating trade surplus, through the use of the GVCS. Establishing proof of the efficacy of the system will lay the foundation for the adoption of this open source enterprise model elsewhere. Indeed, we will facilitate this through the establishment of a training institute, online distance learning opportunities, and programs for other communities to host our trainers for hands on education in the fabrication and use of the open source machinery.

Outcomes

We intend for other individuals and communities to foster new local industries using the Global Village Construction Set. We are developing programs to assist this process ('teach a man to fish'), and we expect that this will lead to multiple outcomes. The primary outcome that we target is the raising of the standard of living for people in a way does not lead to dependency and economic sacrifice from other people. Furthermore, since poverty is such a core problem, strategic solutions that address this main issue will lead to multiple secondary benefits. These include reductions in government deficits, reductions in social dysfunctions that arise out of the stressful conditions that the poor often live in, the easing of social tensions between political parties, and the development of new avenues of creativity and production, as communities throughout the country and across the planet are empowered by the tools of an open source society.

Number of Beneficiaries

Independent replications of the currently released machinery are already taking place in Baltimore, Austin, and Dallas, and we expect a hundred more by the end of the next year. The number of future adopters of the platform cannot be predicted at this point, but we foresee a time when multiple farms in every state implement some of our designs. Open source tools, by their very nature, are continuously improved where people remain involved and interested in their development, which will, in turn, improve the desirability of the GVCS as it becomes more efficient and the cost of production decreases. The final answer is that we don't know the number of people that will be affected by this work, but it ultimately could be in the millions and have an intergenerational impact.

Measurement & Reporting Tools

Our progress is measured by how successful we are in designing machinery, how many people are engaging in the training program, and how many people are implementing the open source designs in their own enterprises. Program measurements are used to inform how well a non-profit's services are being implemented, and to gather data about how they can be improved. This intention is at the heart of the open source platform, where best practices are innovated through a collaborative effort. For example, the progress of independent efforts to replicate our work are documented in our wiki through written testimonials, photographs, and video updates covering their successes, failures, and questions.

Evaluation Process

As each machine within the GVCS platform is designed, it undergoes three prototype iterations. Each prototype is field-tested to determine how effective it is in fulfilling its intended purpose. Our team of engineers and fabricators collaborate with one another to identify improvements that need to be made, and final designs are released to the public to undergo open critique and refinements by industry professionals, engineers, fabricators, etc.

Organization Name: The Terra Foundation (fiscal sponsor)

Program Title: Open Source Ecology						
Program Goal: alleviate poverty by training individuals and communities to create their own low-cost, highly productive industrial economies using the Global Village Construction set open source platform.						
Activity	**Outputs**	**Outcomes**	**Number of Beneficiaries**	**Location**	**Measurement tools**	**Evaluation Process**
1. The Global Village Construction Set (GVCS)	Designs, prototypes, and documentation.	Fostering of local industrial economies, reduction in poverty levels.	1,000 – 1m+	Factor e Farm - Maysville, Missouri	Prototypes and Documentation	Open Source peer review
2. Training people to fabricate the GVCS	Curriculum, distance learning tools, independent replications.	Other communities create their own economies.	1,000 – 1m+	Global	Surveys and tangible results.	Open Source peer review.