International Green Structures

The solution to the global housing crisis

SHELTER AFRIQUE 33RD AGM AND SYMPOSIUM

ALTERNATE BUILDING TECHNOLOGIES AND CONSTRUCTION METHODS

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Challenges to Scalability

FINANCING

ACCOUNTABILITY

TRANSPARENCY

REGULATIONS

Policy and Regulatory Reforms

- **Financial**: Home ownership savings programs; longer repayment periods; competitive interest rates
- **Accountability**: Public ratings to measure government and builders towards promises
- **Transparency**: Clear land ownership and titling
- **Regulatory**: Pan-African builder approval process; tax incentives for ABT builders

The Challenge

The Problem

345 million slum dwellers[1]
10 million IDPs[2]
3 million refugees[3]

358,000,000

(Approximately)

Options

Conventional Block
Burnt Brick
Alternative Building Technologies

12 ABTs

Source: 1) UN State of the World's Cities 2013; 2) Internal Displacement Monitoring Center 3) UNHCR

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Bigger Challenge

7,458,300

Based on 4 people/house and 12 ABT's

needed by 2020

Why ABTs?

Compared to traditional building methods (wood, brick, block) whose technology has not made substantial technological improvements in several hundred years, ABTs developed in the last century offer many of the following benefits:

- **Sustainability**: ABTs using recycled plant and animal fibers, for example, can reduce carbon footprint, reliance on non-renewable resources result in less jobsite waste.
- **Speed**: Prefabricated ABTs, for example, can shift construction time, material and labor to a factory which reduces time to build to help meet current demand.
- **Quality**: Improved durability and strength and often weigh less.
- **Affordability**: Materials and speed of construction both result in lower overall construction costs.

Our Solution - IGStructures

- **Sustainability**: Uses renewable raw materials; creates local jobs
- **Speed**: Steel framing system provides easy assembly and significantly faster build
- **Quality**: Culturally adaptable; natural fire retardation; strong thermal properties
- **Affordability**: 25-30% less expensive than block when manufactured in country

Benefits To Our Solution

SUSTAINABLE

FARM TO FACILITY

MANUFACTURING FACILITY

TRANSPORTABLE

DURABLE

AFFORDABLE

Annual Cash Crop Perspective

Top Wheat Producing African Countries

Country	Wheat Production (Ha)	# of IGStructures
Ethiopia	1,627,647	801,797
Kenya	148,703	73,253
United Republic of Tanzania	109,816	54,097
Nigeria	90,000	44,335
Zambia	37,309	18,379
Rwanda	35,016	17,249
Eritrea	26,000	12,808
Uganda	14,000	6,897
Zimbabwe	12,500	6,158
Mozambique	12,000	5,911
Mali	10,349	5,098
Burundi	9,434	4,647
TOTAL		**1,050,628**

Agriculture Stats from UN FAO crop production data for 2012. Compressed Agricultural Fiber (CAF) Panel Production: One 40 meter house is produced by 1.27 hectares of rice biomass and 2.03 hectares of wheat

Annual Cash Crop Perspective

Top Rice Producing African Countries

Country	Rice Production (Ha)	# of IGStructures
Nigeria	2,685,000	2,114,173
Madagascar	1,350,000	1,062,992
Guinea	1,000,000	787,402
United Republic of Tanzania	799,316	629,383
Mali	617,109	485,913
Sierra Leone	610,000	480,315
Côte d Ivoire	385,000	303,150
Liberia	250,000	196,850
Mozambique	238,000	187,402
Ghana	189,529	149,235
Burkina Faso	136,864	107,767
Senegal	135,129	106,401
TOTAL		**6,610,982**

Agriculture Stats from UN FAO crop production data for 2012. Compressed Agricultural Fiber (CAF) Panel Production: One 40 meter house is produced by 1.27 hectares of rice biomass and 2.03 hectares of wheat

Total Annual Cash Crop Perspective

	Production (Ha)	# of IGStructures
Wheat	2,132,774	1,050,628
Rice	8,395,947	6,610,982
	Approx. Total # of IGStructures	**7,661,610**

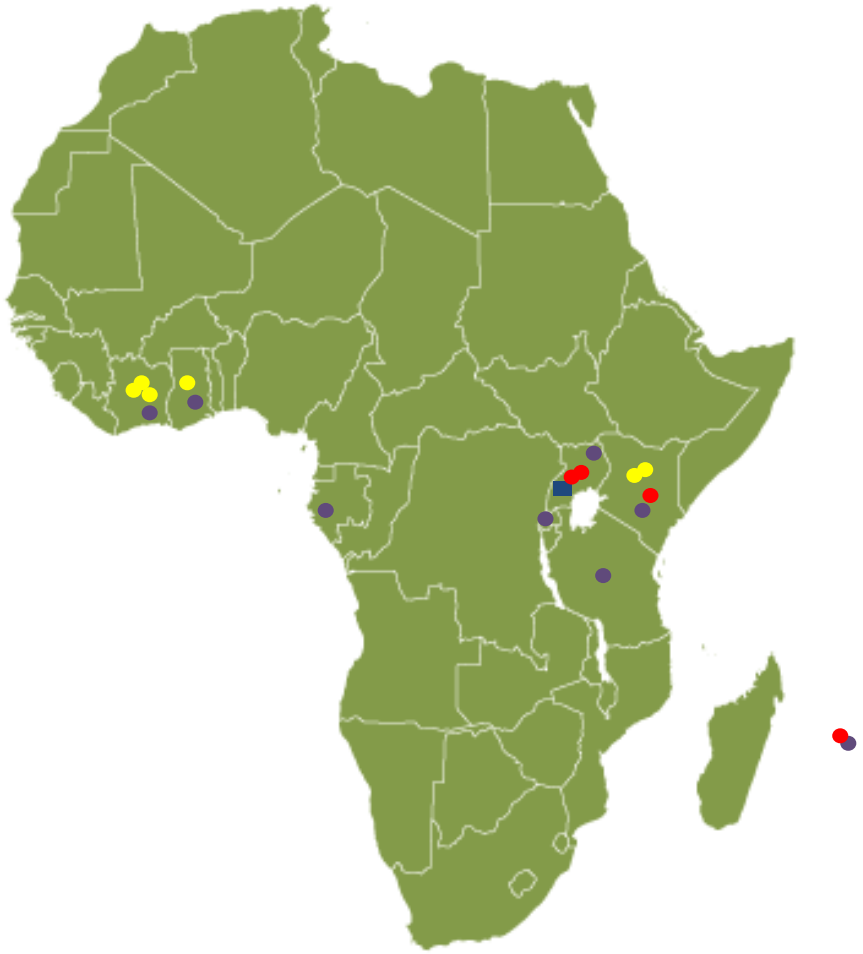
Agriculture Stats from UN FAO crop production data for 2012. Compressed Agricultural Fiber (CAF) Panel Production: One 40 meter house is produced by 1.27 hectares of rice biomass and 2.03 hectares of wheat

Our Economic Model

Economic Sectors	Input	Output
Agriculture		**Total to be housed**
Daily labor cost (USD) for one farmer	$ 3.00	1,500
Transportation		**Local Jobs Created**
Cost (USD) for a liter of gas	$ 3.00	704
Manufacturing		
Number of shifts per day	1	**Total GDP Impact**
Construction		
Number of houses to build	500	$ 28,025,659

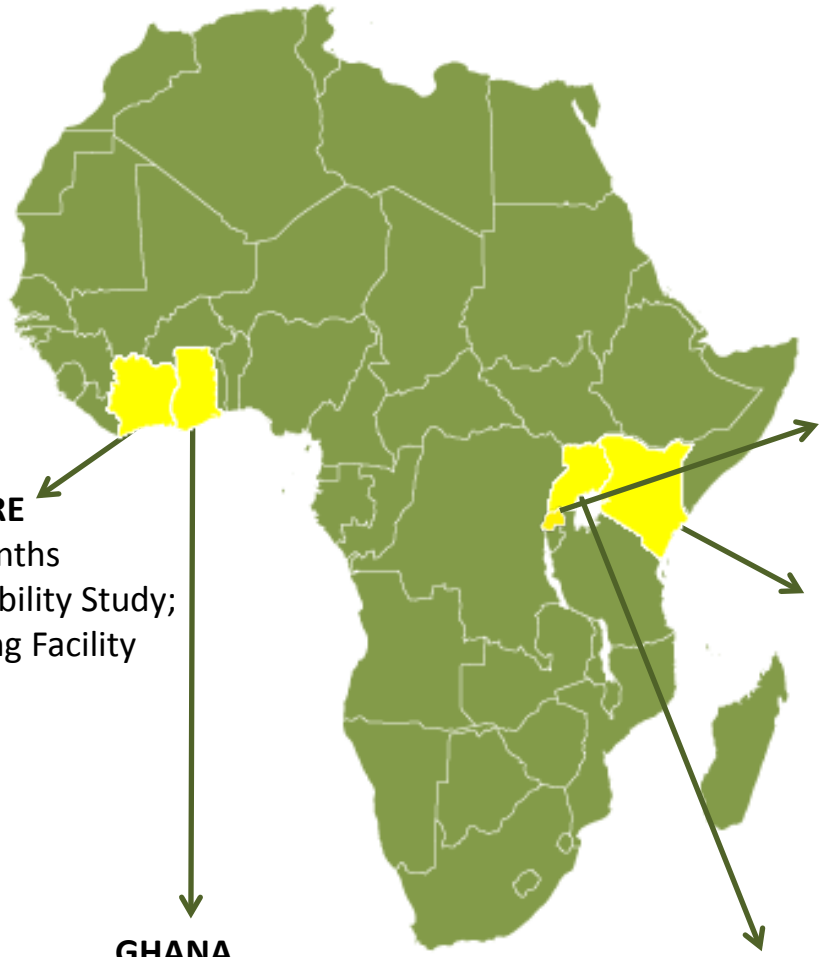
Assumes in-country manufacturing facility with social aspects and benefits from reduced balance of trade agricultural imports

Our Commitment



- 4 Established IGS Entities
- 6 Pending IGS Entities
- 400 acres purchased in Uganda
- 21 IGS delegation trips to 8 countries in 24 months

IGS Success



CÔTE D'IVOIRE
Time: 6 months
Result: Feasibility Study; Manufacturing Facility pending

GHANA
Time: 18 months
Result: Model home built in 11 days; MOU's executed

RWANDA
Time: 24 months
Result: IGS first entry

KENYA
Time: 9 months
Result: IGS Office; 2 models; MOU's executed; Manufacturing Facility

UGANDA
Time: 24 months
Result: Model built in 14 days; Contract executed (not started)

VANUATU
Time: 6 months
Result: Contract started for 2000 homes

Conclusion

“A good plan, violently executed now, is better than a perfect plan next week.”

-Gen. George S. Patton

Thank You

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