

## Expert-Service Voucher No. 11: Construction of a Pilot Zigzag Kiln for Commercial Use, Demonstration and Training

### 1. Purpose:

Supporting construction of Zig-Zag kiln for the combustion of wood-chips fuel

### 2. Voucher validity period: November 2015- June 30<sup>th</sup> 2019

### 3. Criteria for receiving the voucher

Entrepreneurs to receive this support must fulfil the following conditions:

- Be situated in our intervention zone : Rwanda & Burundi
- Have a site with sufficient good quality clay deposits
- Have a long term District license to produce bricks
- Have a viable business plan
- Be able to finance the entire brick construction, except the SKAT contribution
- Be able and decided to purchase machinery for the production of perforated bricks
- Be ready to receive visitors and interns for learning Zigzag kiln operation

### 4. Voucher value: This Voucher entitles the Entrepreneur to receive technical and financial support as follow:

Phase of Construction:	Fast Movers:	Medium Movers	Slow Movers
Site Preparation	2,000,000- (10%)	792,000 (6%)	198,000- (3%)
Foundation and Ground Channels	4,000,000- (20%)	1,848,000 (14%)	462,000- (7%)
Walls	4,000,000- (20%)	1,848,000 (14%)	462,000- (7%)
Arches	6,000,000- (30%)	2,640,000 (20%)	660,000- (10%)
Chimney and control features	2,000,000- (10%)	792,000 (6%)	198,000- (3%)
Roof and finish	2,000,000- (10%)	792,000 (6%)	198,000- (3%)
<b>Total SKAT contribution for a full Zigzag kiln</b>	<b>FRW 20,000,000</b>	<b>FRW 13,200,000</b>	<b>FRW 6,600,000</b>
<b>Bonus for two best performers</b>	<b>30%, reps 20% (FRW 6 million, resp 4 million)</b>		

\*This instalment cannot be guaranteed since it will take place after expiring of the voucher

### Construction Schedule/ Deadlines

Phase of Construction:	Fast Movers	Medium Movers	Slow Movers
Site preparation, levelling, installations	1/12/2015	20/1/2016	1/4/2016
Foundation and Ground Channels			
Walls			30/6/2016
Arches		30/6/2016	
Chimney and control features			
Roof and finish			
<b>Technical Reception/ Inauguration</b>	<b>30/6/2016</b>	<b>Later</b>	<b>Later</b>

SKAT will contribute to the cost of engineer and site manager, supervisor, highly skilled master-masons with experience in arch-construction as well as metal parts of the kiln like chimney and heat movement control system materials.

### 5. Preconditions for "cashing" this voucher:

- The site is cleared and entrepreneur has the right (licence) to use it
- Construction company, masons and helpers are recruited by entrepreneur but agreed with SKAT
- All required construction materials are bought/produced by entrepreneur, including specialized bricks such as refractory bricks
- A contract with a construction company is signed and approved by SKAT
- All preparations works as mentioned are visited and approved by SKAT

**6. Services which can be covered by this voucher:**

- Technical expertise for advising, planning or works supervision
- Staff training for the kiln operation
- Support for the initial firing including fuel for the first 2 weeks of operation
- Practitioners support for key activities

**7. Services which cannot be covered by this voucher:**

- Third party expertise
- Food, accommodation and local transportation for masons & helpers (e.g. between brickyard, accommodation, bus stop)
- Working equipment

**8. Selection of technical service providers**

The entrepreneur selects the construction company based on his own analysis of particular needs and the respective skills and expertise of the service providers.

**9. Obligations & Responsibilities**

The entrepreneur is entirely responsible for the collaboration with the selected experts, their service delivery in terms of quantity and quality

***Preparation and design***

1. Avail land for construction of the kiln and design a layout plan jointly with Skat
2. Share all information with Skat on the business, licenses, obligation to third parties etc
3. Participate (jointly with the supervisors/engineer and master-masons) to the kiln construction training sessions organized by Skat at the beginning of each construction phase

***Construction***

1. Managing the entire construction process from site preparation until completion and adjustment (if any) in collaboration with a construction firm experienced in arch construction
2. Purchasing/producing all required construction materials including refractory bricks (See attached the details of BoQ)
3. Monitor day today activities during construction and exchange progress and challenges with Skat and implement advise from Skat's expert- support supervisor

***Initial Production***

1. Produce and dry the required green bricks during the initial operation of the Kiln for at least a period of one month
2. Manage the kiln operation including equipping and remunerating required technical and non-technical labour for kiln operation
3. Implement advise offered by Skat experts

SKAT may support or recommend the entrepreneur in selection of the construction company and Expert for supervision of the construction of the kiln.

**10. Implementation of voucher service**

This voucher shall be valid and effective upon signing an agreement with SKAT Consulting Rwanda Ltd