



**PRESENTATION
WORKSHOP IN GERMANY
MINING MANAGEMENT
AT TRUNG SON CEMENT FACTORY**

Presenter: Duong Thanh Binh

**Address: Vice-General Manager, Trung Son Cement
Factory, Luong Son district, Hoa Binh province**

General information

- Name of company: Trung Son Cement Factory
- Address: Loc Mon village, Trung Son commune, Luong Son district, Hoa Binh province
- Company form: Subsidiary – dependent accounting, investment license No. 0500442020-006, dated 16/12/2014, first approval by Hoa Binh Department of Planning and Investment
- Cement producer, mainly using limestone as raw material which represents >80% of used raw material per unit of clinker output

I. Mineral extraction

- Situated at limestone mine “Loc Mon” Trung Son commune, with an area of 20ha (phase 1), and up to 100ha (phase 2), whereas maximal extraction of monolith limestone will reach 500.000m³ per annum.
- In order to achieve the necessary quantities, and uphold occupational safety and environmental protection exactly as planned, the plant management deploys the right technological processes and modern equipment, from extraction to drilling to transport

II. The Cement Plant

1. Current operation of the plant:

1.1. Scale, technology:

- The production line of the plant was chosen based on advanced equipment and modern production technology of rotary kiln using the dry technology with heat exchange towers and multiple decomposition.
- The production equipment is thoroughly aligned state of the art automatic systems of monitoring, measurement and automatic control which allows maximal use of resources, reducing energy consumption, leading to a product of high quality and stability, while ensuring the safety of the production process, industrial hygiene and environmental protection.

1.2. Product output and markets

- Plant operation started in December 2014, the testing phase has just finished (March 2015). Current production level is equal to 90% of planned capacity, with clinker output of 2,250 tons/day, 67,500 tons/month which is equivalent to 80,000 tons/month
- Signed sales contracts with 10 buying units, concerning the cement products PCB30, PCB40, PBC30, loose PCB40 and clinker Cpc50
- Our products are sold in several provinces, e.g. Phu Tho, Vinh Phuc, Hanoi, Thanh Hoa, Hoa Binh, Son La ...

2. Promote implementation of environmental protection, results of investment and operations of collection and waste treatment

2.1. Waste treatment:

- Waste water
 - Industrial wastewater: industrial waste water in cement (industrial hygiene) does not contain toxic substances, but high concentrations of solid substances the volume of industrial waste water is not exceeding 30 m³/day. Thus, the industrial wastewater is collected through closed ditches which are separated from rain water.

2.1. Waste treatment:

- Waste water

- Waste water treatment: average waste water volume at 35 m³/d arise from Office, the canteen will be separated and put in the waste water treatment station after ISO processing 6772-2000 will put in the drainage system of the plant.
- The ditch containing industrial waste water channeled through the basin provided for removing oil and then to the central liquid waste treatment station (e.g. to remove heavy metal – if any and other pollutants), with the process ending in the drainage system of the plant.

2.1. Waste treatment:

- Emissions, dust and noise:
 - to limit dust emissions, “closed” technology was chosen for the plant, with advanced equipment and high automation control, specifically applied in production areas with high dust incurrence
- Solid waste management:
 - waste separation at waste containers, daily waste separation by the plant's sanitation crew and brought to waste management facilities according to management plan.



3. Applying new and clean technology

- With regard to quality of extracted materials, the plant has achieved standard as being required in cement production.
- The rate of equipment and the process of separation of stones and rocks is sufficient for cement production, normally the rate is at 30%
- In order to further use the resources and not having the need to invest in a dump site, to reduce pollution to ground water, the plant invested in 2 stone crushing lines as an intake of all useable material not of use for cement production



3. Applying new and clean technology

- Achievements:

- By crushing of tons of m^3 of mixed rocks and earth the plant is producing “secpay”, ensuring quality level according to national standards of Vietnam:
 - Secpy is is being used in State road construction
 - remaining material: stone flour and tiny stones sizing $\leq 0,5mm$
- The Cement plant has invested in a brick factory. The bricks were used to build the office buildings at production site.



* **Strategy on factory for unbaked bricks**

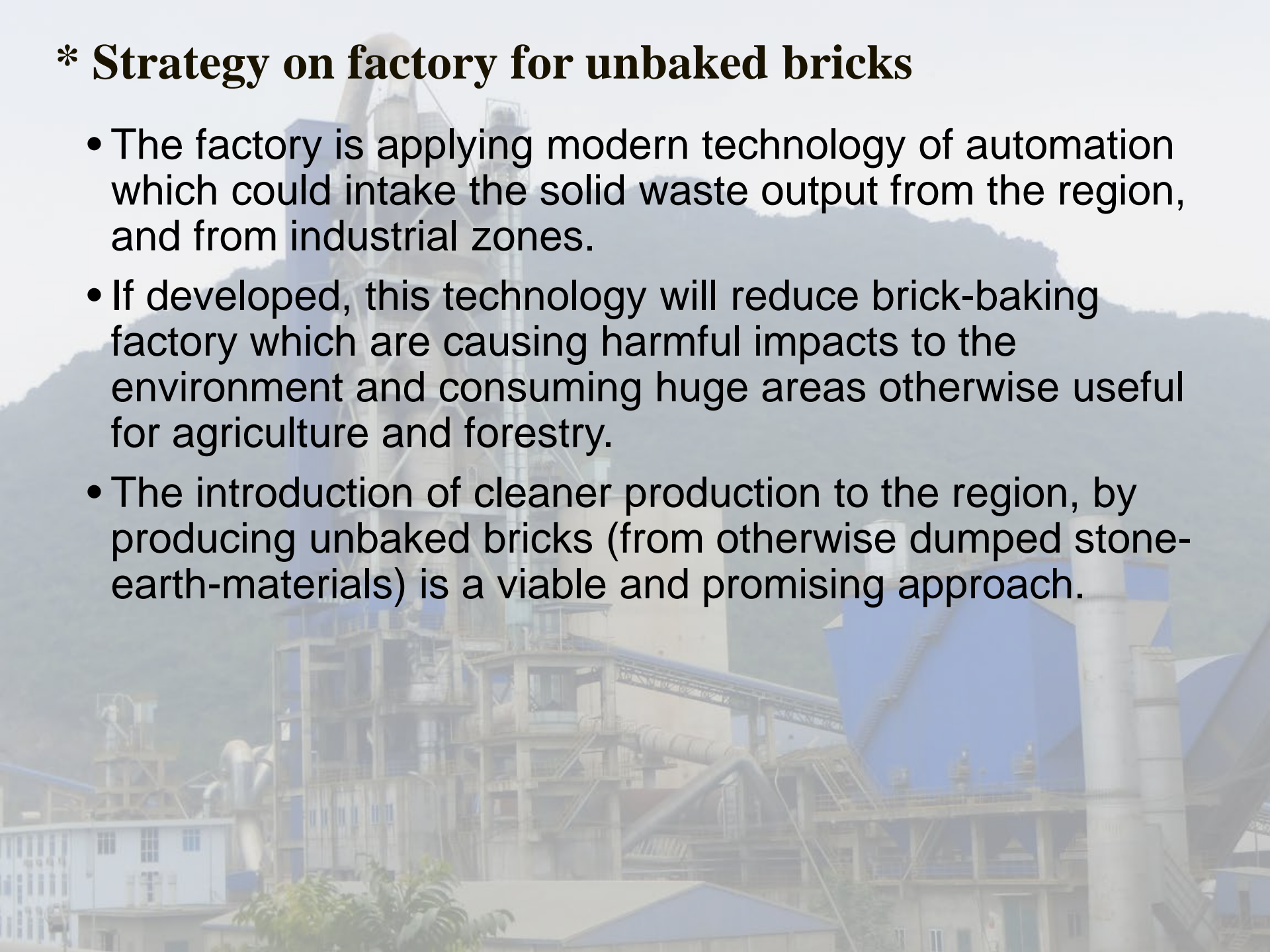
- The plant is currently setting up a factory to produce unbaked bricks:

- planned max. output of 2 billion bricks p.a.,
- divided in 2 investment phases
- generally targeting the further use or recycling of materials from
 - construction & demolition waste
 - mining activities
 - cement production
 - fly ash from combustion processes of coal-fired power plants etc.

... into useful materials that meet the demands of construction and social economic development , minimize the sources of environmental pollution.

* **Strategy on factory for unbaked bricks**

- The factory is applying modern technology of automation which could intake the solid waste output from the region, and from industrial zones.
- If developed, this technology will reduce brick-baking factory which are causing harmful impacts to the environment and consuming huge areas otherwise useful for agriculture and forestry.
- The introduction of cleaner production to the region, by producing unbaked bricks (from otherwise dumped stone-earth-materials) is a viable and promising approach.



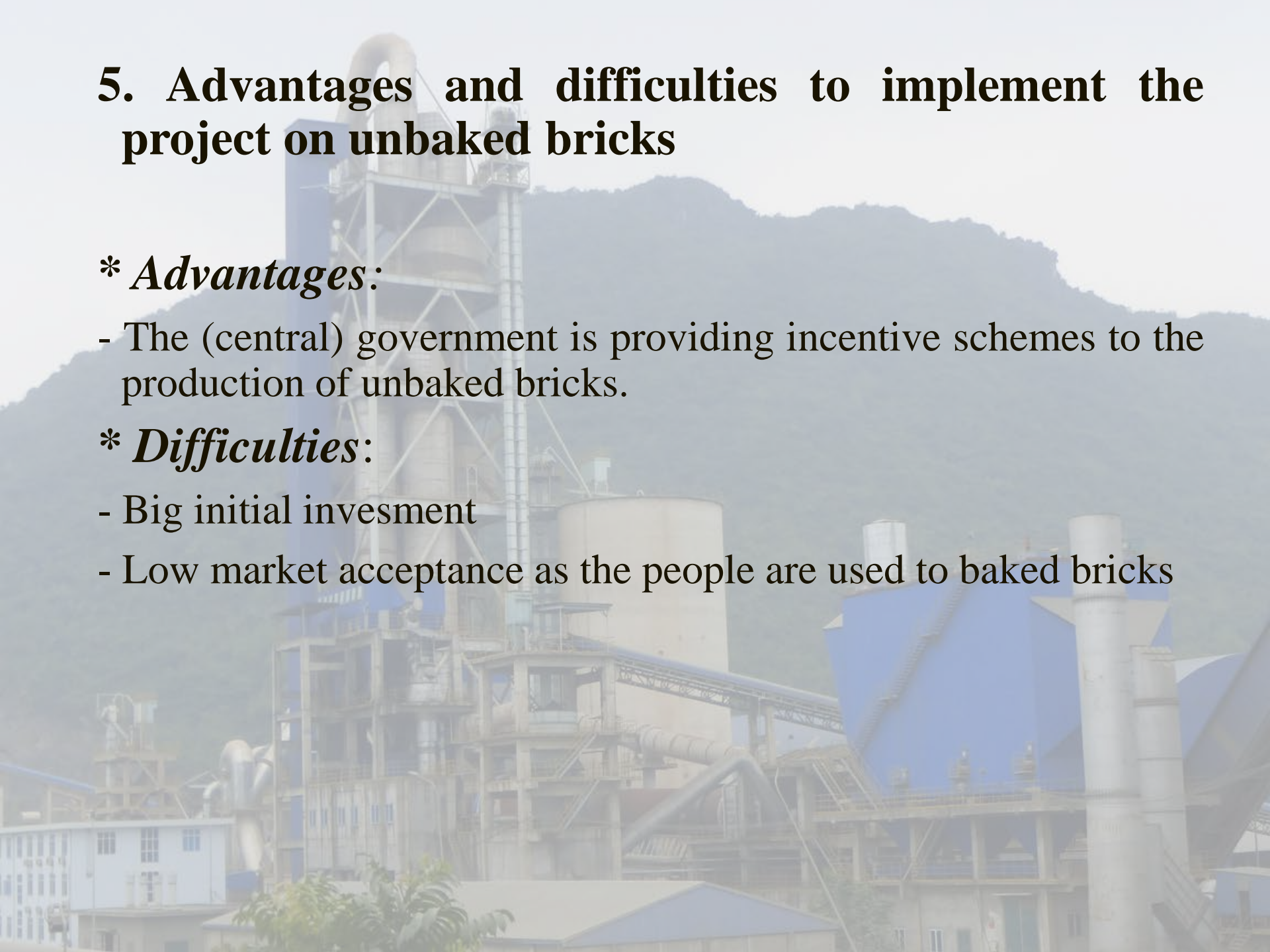
5. Advantages and difficulties to implement the project on unbaked bricks

* *Advantages:*

- The (central) government is providing incentive schemes to the production of unbaked bricks.

* *Difficulties:*

- Big initial investment
- Low market acceptance as the people are used to baked bricks



CONCLUSIONS

- To success in clean technology investment projects [of unbaked bricks], the State, the central administration, the People's Committee and its departments could
 - Utilize the resources from the Environmental Protection Fund of the province and
 - provide low interest loans to such projects
 - Provide other incentives according to law (for projects in cleaner technologies, environmental-friendly, saving energy...)
- Policies encouraging the use of the unbaked building construction projects in the province and in the country.



Thank you for your attention!

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