



## Japanese technologies for textile industries and foundries: results of field survey



## Context

- JITMAP initiative aims to facilitate B2B matchmaking of Japanese LCTs (low carbon technologies) in India
- To expand the basket of Japan technologies under JITMAP, needs assessment conducted in two sectors:
  - Foundry: 3<sup>rd</sup> largest producer of castings, 4,500 foundries, majority MSMEs
  - Textile: 2<sup>nd</sup> largest producer of textiles. 95% of the cloth production is by MSMEs
- Sample surveys/interviews conducted with industries in Ahmedabad. The purpose was to understand the opportunities of adoption of Japanese technologies among these industries.
- Japan is a significant player in automated moulding machines (foundry) and automatic airjet looms (textiles). Indian MSMEs offers a huge market for these technologies.

## Findings textile looms

- 2.8 million looms installed in India. Only 5% of the looms are automatic high speed type and balance are semi-automatic/conventional shuttle looms
- Conventional shuttle looms are manufactured in India. About 1000 looms are manufactured in Ahmedabad daily. There are no local manufacturers of automatic looms in India
- The speed of the semi-automatic looms, range between 130-200 rpm, compared to 600-2000 rpm of imported automatic looms
- Hence the productivity of weaving sector in India is low. Adoption of automatic looms in place of the conventional shuttle looms will increase the productivity by up to 5-5.5 times in the existing factory premises apart from increasing the efficiency and quality of the fabric produced

## **Findings textile looms..contd.**

- Some MSMEs showed interested in Chinese looms (about 400 rpm) as their capital as well as operating costs are also lower
- The adoption of Japanese looms (Toyota and Tsudakoma) can be accelerated if technical specifications (viz. speed) and consequently the price of these machines care adopted to suit the MSME segment
- Looking at the market potential for automatic looms in India, the Japanese airjet loom technology is an ideal candidate for co-innovation and large-scale replication

## Findings moulding machines (foundry)

- Moulding is the second highest consumer of energy in a mechanized foundry, after melting.
- A vast majority of foundries in MSME are not mechanized and continue to use labour intensive hand moulding practices
- Mechanization of moulding operation offers several advantages such as labour saving, higher productivity and better accuracy of the finished product
- Japanese machines (Tokyu, Koyo and Sinto) are preferred by some of the more progressive foundries who can afford the higher price
- The high capital investment in Japanese moulding lines is a major barrier to their wide-scale adoption by foundries in India
- Japanese technology has good scope for market expansion in India if their capital cost can be brought down even by compromising some technical specifications



## **Barriers and remedial measures**

### **Main barriers**

- Higher capital expenditure (CAPEX)
- Lack of awareness among consumers about the benefits of the technology
- Lack of good service network
- Training of machine operators

### **Remedial measures**

- Make in India
- Awareness generation
- Strengthening local service network
- Establish training centres for operators at national/regional level

**Thank you for your kind attention**

