

## **Data Collection Tools**

### **1. Semi-Structured Interview Questions for LIDI, AAIT-UIL and IEO**

Please state your name, managerial post and educational background for the record.

1. What is your level of involvement in supporting industrial clusters?
2. What do you believe is your role for technology adoption and diffusion in enterprises within industrial cluster?
3. Do you think it is important to provide R&D and technical training to enhance enterprises technology adoption capacity?
4. How do you support enterprises, is it by giving technical training, providing R&D or by supervising what they are doing? (please give detailed support structure and procedure)
5. Is there any structured schedule to support the enterprises? If so How often do you give technical training for the enterprises?
6. How do you see the importance and relevance of working corporately with industrial clusters in building technological capability and accelerating technology diffusion inside the enterprises?
7. What seem to be the hindering factors (obstacle) in supporting enterprises capability development?
8. What measures are taken by your institute and your office in particular to build technological capable enterprises?
9. How do you see the importance of enterprises technological capability regarding faster diffusion of technology in the cluster?
10. What level of attention is given to support SMEs as compared to large industries?
11. If your response is no then, what do you think is the major reason?
12. What do you think is the role of this enterprises in being source of technology?
13. Is there any operational capability support, maintenance activities support to enable the enterprises as innovators?

## **2. Semi-Structured Interview Questions for Addis Ababa Industry Office and Federal small and medium enterprises development agency**

1. What is the major role of the office with respect to enterprises technological capability development?
2. Which supporting organizations are major entities involved in the building technological capability of the enterprises and how are they involved?
3. What are the hindering factors for the enterprises less technological capability?
4. How do you think governmental policy affects the enterprises to adopt value adding technologies?
5. What are the regulatory tasks undertaken by the office?
6. As compared to large firms, is there a special attention given to SMEs?
7. Is there any platform developed for collaboration between enterprises?

## **3. Semi-Structured Interview Questions for financial institutions (Development bank of Ethiopia)**

1. Can you briefly describe the overall current loan process for the SME enterprises development?
2. What are the major prerequisites expected from the enterprises to get a lone for the purpose of new equipment or machinery?
3. Are there any specialized provisions of loan and other supports for firms within nationally formed clusters?
4. What do you think is the major constraints for your institution that makes the loan getting process tough?
5. What do you think should be done to address above mentioned problems/challenges?

## **4. Structured Interview (survey) of Enterprises to measure adoption rate of CB-PMGP technology**

1. Do you use heavy duty stitching machine for your manufacturing process?
2. If your answer for question 1 is yes then, how you adopted the technology
  - a) Internal source (where the technology was already in use by other enterprises in the cluster)
  - b) External source (the technology was not used by other enterprises in the cluster before and adopted from external source)

3. If your answer for question 2 is from internal source, then select the specific source
  - a) Own effort to identify technology
  - b) Other enterprises in the cluster
  - c) Specify if any
4. If your answer for question 2 is from external source, then select the specific source
  - a) Research institutions
  - b) Other firms outside the cluster
  - c) Technology supplier
  - d) The internet
  - e) Specify if any

## Questionnaires

### Semi structured Questionnaire to measure the internal factors affecting technology adoption

**For the owner or management personnel**

#### Part I: Basic Company Profile

Name of enterprise: \_\_\_\_\_

Level Small/medium: \_\_\_\_\_

Respondent position: \_\_\_\_\_

Respondent educational background: \_\_\_\_\_

#### Part II: Enterprises behavior or working culture and integration with other enterprises

Please rate the descriptions of indicated factors by putting (X) mark on values from 1 to 5 (1 to mean not available and 5 very strongly available)

No	Description of factors	1	2	3	4	5
1	willingness of your employees to learn from other enterprises in the cluster					
2	Willingness of your enterprise to learn other enterprises in the cluster					
3	Good working culture in the enterprise to empower employees for adopting technology					

4	Enterprise's training culture to enhance employees adopting capability					
5	Importance of research and development for the enterprise					
6	Importance of training for the enterprise					
7	Enterprises research and development expenditure					
8	Trust between enterprises regarding shearing technical knowhow					
9	Enterprise's adoption strategy or the focus given for technology adoption					
10	Competition between enterprises to come up with value added product					
11	Positive effect of clustering or geographical proximity for technology diffusion					
12	Negative effect of Culture or social barriers on technology adoption and diffusion					

### **Part III: Enterprises working culture with supporting institutions**

1. Is there collaboration culture of the enterprise to work with knowledge institutions?
2. If yes, what are the means of collaboration with learning institutions?
  - a) They provide training periodically
  - b) They provide research and development
  - c) Comment provision on work we have done
  - d) They supervise our work
  - f) Other (Please specify) \_\_\_\_\_
3. Among the following learning institution, which one is well cooperatively working with you?
  - a) Universities
  - b) Industry extension office (TVETs)
  - c) Specify if any

3. Among the following research institution which one is well cooperatively working with you?
  - a) Lather industry development institute (LIDI)
  - b) Specify if any
5. Do you think financial constraint is more influential factor for your enterprises adoption strategy?
6. Is there a means that you get support from financial institution to adopt new technology?
7. Which financial institution is mainly supporting your enterprise in order for the procurement of a new machine or any other technology?
8. From the following, for which supporting institution do you give more weight for the overall technological development of enterprise?
  - a) Financial institutions
  - b) Learning institutions
  - c) Research institutions
  - d) Regulatory institutions

**Structured questionnaire for Pairwise comparison of internal factors (for owners)**

Put check marks on the pair-wise comparison matrices for employee behavior (EB), technology attribute (TA) and firm behavior (FB).

Importance (or preference) of one factor over another											
No	Criteria	Extremely important	Very strongly important	Strongly important	Moderately important	Equally important	Moderately important	Strongly important	Very strongly important	Extremely important	Criteria
1	EB										Trust
2	EB										Informal contact
3	EB										Absorptive capacity
4	EB										Culture
5	TA										Complexity
6	TA										Compatibility
7	TA										Relative advantage

8	FB										Firm strategy
9	FB										Cooperation
10	FB										Competition

**Structured questionnaire for Pairwise comparison of external factors**

Put check marks on the pair-wise comparison matrices for external support (ES) and social environment (SE).

Importance (or preference) of one factor over another											
No	Criteria	Extremely important	Very strongly important	Strongly important	Moderately important	Equally important	Moderately important	Strongly important	Very strongly important	Extremely important	Criteria
1	ES										R&D
2	ES										Training
3	ES										Financial support
4	ES										Technical support
5	ES										Regulatory
6	SE										Geographical proximity

7	SE										Social barrier
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**Semi structured Questionnaire for employees of the enterprise**

**Part I: Employee Personal Information**

1. Your professional background: -----
2. Please indicate your educational level
  - a) High school
  - b) College diploma
  - c) B.Sc/BA. degree and above

**Part II: Employees behavior or working culture**

1. Do you believe that working cooperatively affects the adoption rate of new or existing technology?
2. Rank the following activities in their contribution to technology adoption and diffusion in your working area (Please use: ‘3’ - very important, ‘2’ - moderately important and ‘1’ - fairly important)
  - a) Own effort \_\_\_\_\_
  - b) Informal contact \_\_\_\_\_
  - c) Training Efforts \_\_\_\_\_
3. Which of the following is more challenging to adopt and learn new technology easily?
  - a) If it is complex and difficult to understand how to operate or how to implement
  - b) If it is not Compatible to our manufacturing process
  - c) If it’s benefit or outcome is not Visible
  - d) Specify if any
4. How would you rate the level of openness/trust between your colleagues?
  - a) High
  - b) Medium
  - c) Low
  - d) None
5. How frequently do you contact your colleagues informally?
  - a) Every day
  - b) Some times

- c) Rarely
  - d) Not at all
6. How would you rate your culture (perception or attitude) regarding transferring knowledge and technical knowhow to your colleagues?
- a) High
  - b) Medium
  - c) Low
  - d) None
7. Do you share information about your working environment when you meet informally?
8. If your answer for question 8 is yes then, how do you compare it with sharing knowledge with colleagues formally in the working time?
9. How do you see the social or cultural barriers to share knowledge?