3.5 Civil Infrastructure, Manufacturing and Industrial Technology

Production and quality management has been recognized as an important factor in acountry's economic growth. Rapid changes in technology has posed numerous opportunities and challenges which have resulted in enhancement of manufacturing capabilities through new materials, facilities, techniques and procedures. Hence, managing a service/production system has become a major challenge in the global competitive environment. Production and quality management leads the way for organizations to achieve their goals with minimum effort. Equaly, computer aided manufacturing and control system (automation) or robotics is current global trend as it is capable of reducing cost of production, waste, hazard and increase accuracy, productivity as well as process capability in different industries. Attention shall be also given for small and medium manufacturing enterprises (SMME) as they contribute a lot in job creation and support to the national economy of a country. Currently, SMME are organized and expanding in Ethiopia on the basis of agricultural-economy to industrial-economy transformation. Hence, design and renovation of modified, cost competent and demand driven technologies in areas of crop harvesting and after harvest processing as well as construction equipment are highly required in these manufacturing enterprises and markets to gear up the economy. Accordingly, the following prioritized research areas are included:

- Different aspects of quality & production management of different industries in eastern Ethiopia: logistics, total quality management, production operation management ; continues improvement (KAIZEN);
- Reverse Engineering: focusing on biomedical engineering, mechatronics and/or robotics (Automation of systems & mechanisms);
- Adaptive Technology: focusing on agricultural machinery, construction equipments, and appropriate technologies to address local community problem.