

Sustainable Industrial Areas – a supporting Framework for Scaling-up Industrial Symbiosis

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Summary – Key Thesis

- Global need for change & transformation towards green (low-carbon, resource-efficient and socially inclusive) economies
- The challenge of green economy transformation requires new and resource-efficient industrial production patterns
- Industrial symbiosis can contribute to deliver these new production patterns
- Industrial production takes place in industrial areas = important feature of today's industrialization that is shifting more and more to emerging economies
- IA offer enormous potentials for increasing resource efficiency and transforming economy to be greener and more circular
- Systematic conception and implementation of industrial symbiosis networks require enabling framework conditions:
“Sustainable Industrial Areas (SIA) - the place for industrial symbiosis”
- SIA: Sustainability solutions need the debate of all stakeholders, require definitions & rules...
- ..and **their potentials should be taken into account** by policy-makers, business leaders and researchers (see SDG 8 etc.) to meet global agendas.



Economy Transformation in 2015

Need for new
and resource-
efficient
industrial
production
patterns

Demand
for social
equity

High **growth rates** of
emerging economies

Need to create jobs and
reduce poverty

Request to
increase
industrial sector

Adverse climate
change impacts

Increasing
environmental
degradation

Scarcity of resources



Trend | Industrial Areas

Global shift of
production sites to
developing and
emerging countries

Expansion of
industrial areas
in emerging
economies

SEZ

FEZ

FTZ

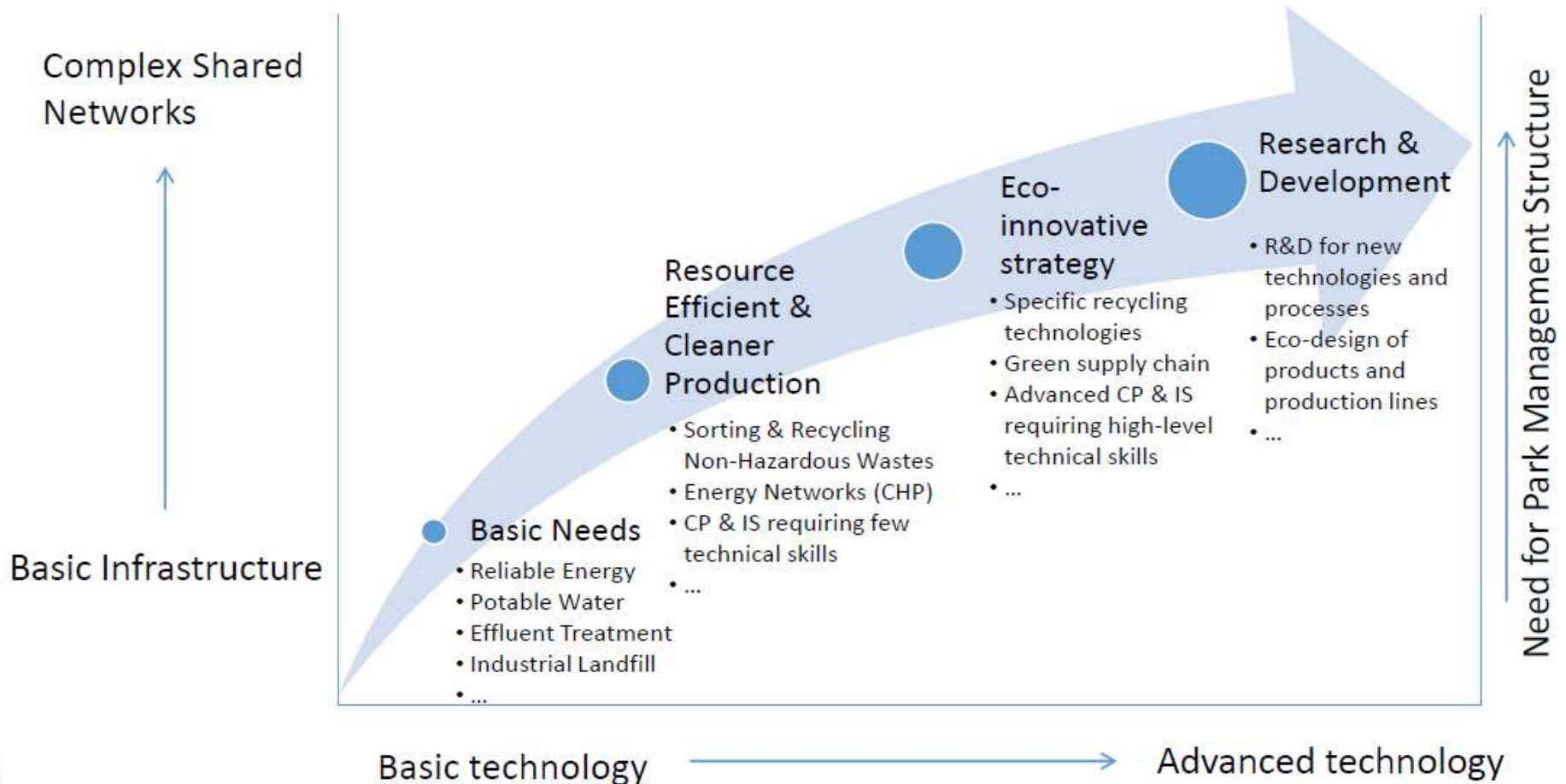
EIP

IE

etc...

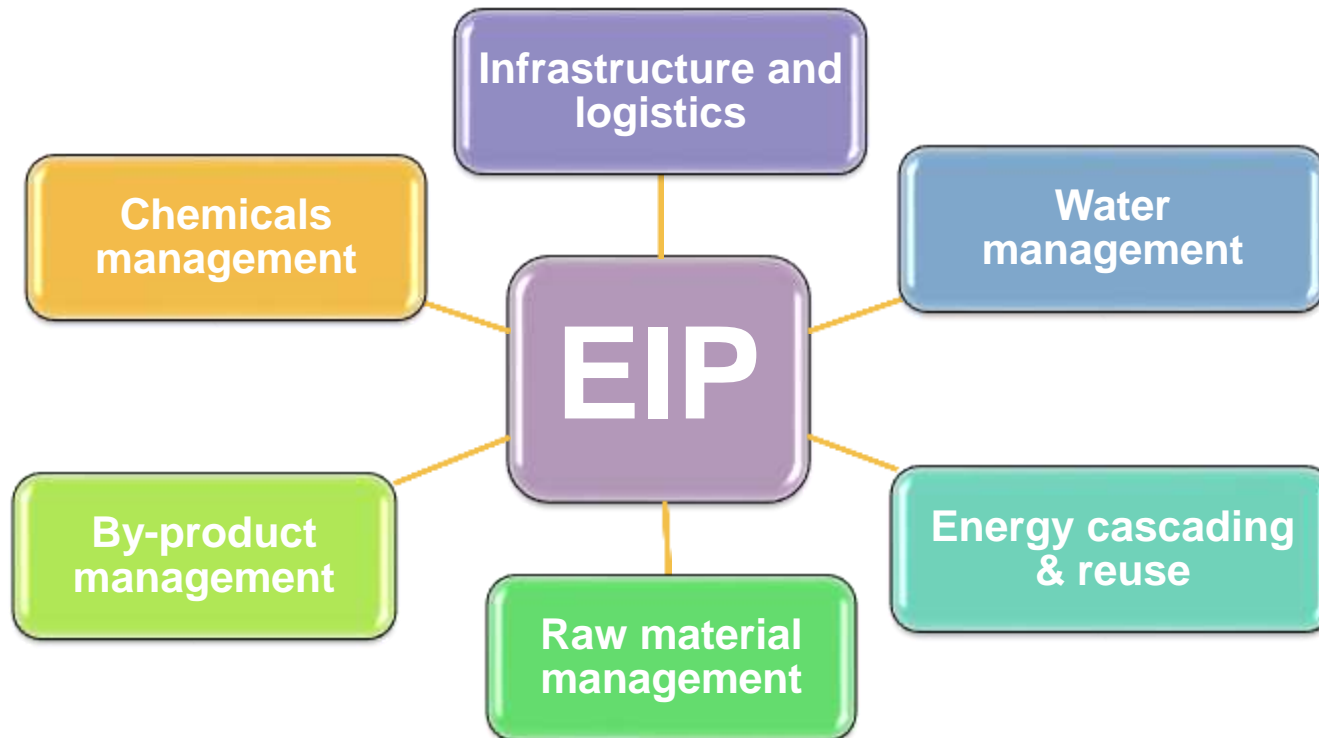


Stages of Development of EIPs





Main Benefits





Implementing industrial symbiosis – what does it need?

- Knowing the roots – the impressive success story of Kalundborg: without government planning, unintentionally, private initiatives, based on trust, communication, no competition
- Is there a way to systematically scale up a success model depending on „fortunate circumstances“?
- **Good planning** and **strong management capacities** of an IA help to identify, assess, coordinate and moderate an industrial symbiosis network
- It is the task of the management of an industrial area to promote resource efficiency. Depending on the level of inclination of the companies the management can be the **spin-doctor for networks for industrial symbiosis** and energy efficiency in order to introduce circular economy in the park.



Introducing SIA | Practical experiences



Site Selection and
Master Planning

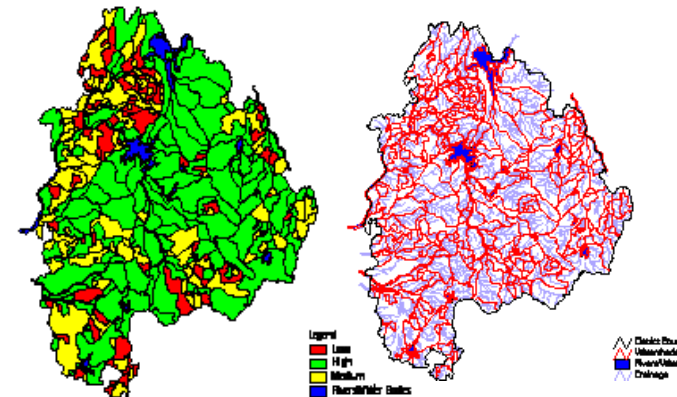


Management Structures



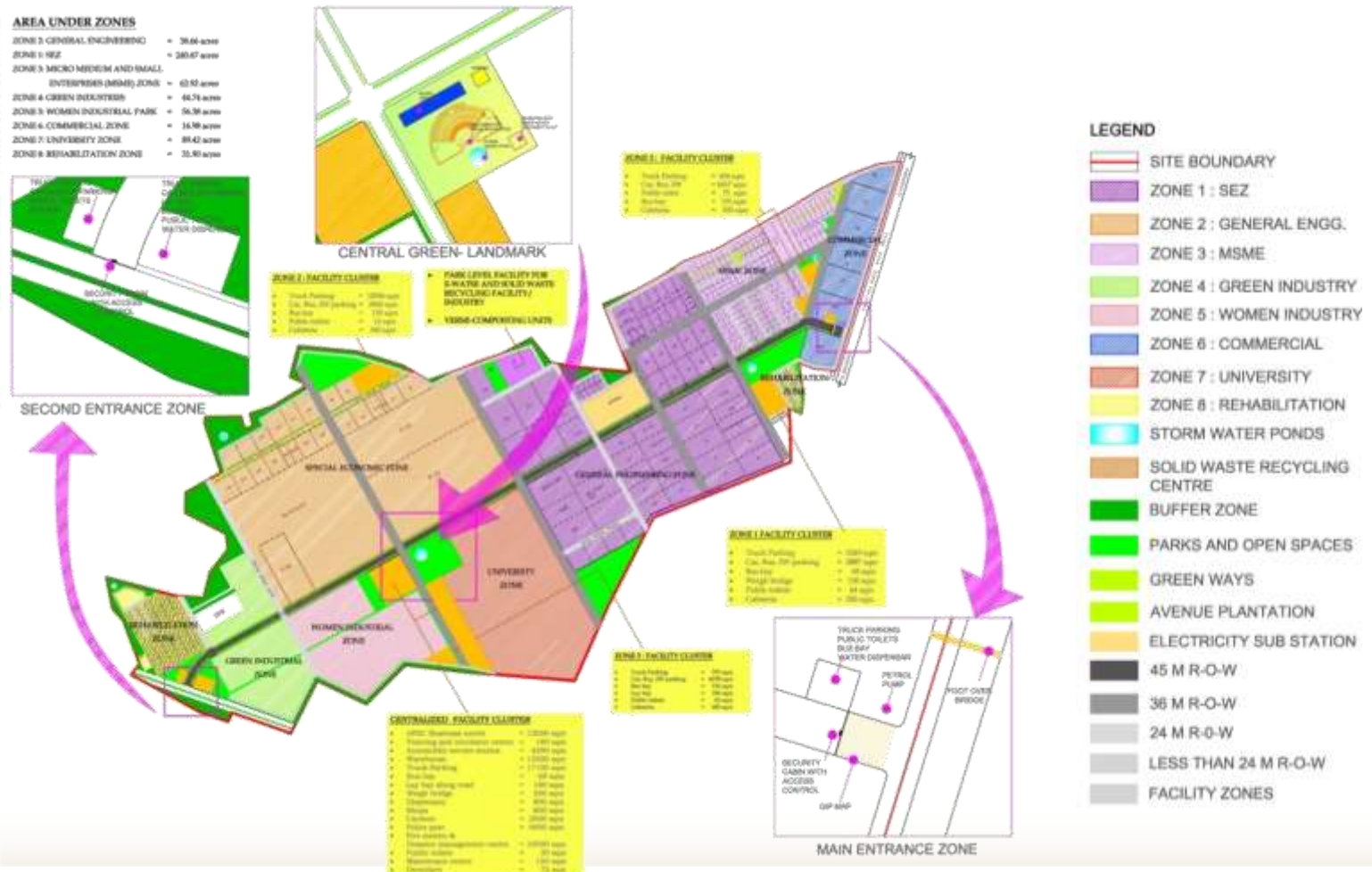
Site Master Planning | Key elements

- Integration of park in surrounding infrastructure
- Efficient land use planning
- Planning of park infrastructure
- Energy supply
- Water supply, waste and wastewater treatment facilities
- Environmental, emergency and social facilities





Greening of GIP Jadcherla | Example India





Management Structures | Key elements

- Organisational structure
- Management style
- Service offers
- Supervision duties
- Business behaviour
- Communication and PR





Management Structures | Example Tunisia

- SMIA Training (“Sustainable Management of Industrial Areas”)
- Improvement of organisational degree of industrial areas
- Triggered many actions





Requirements in 2015

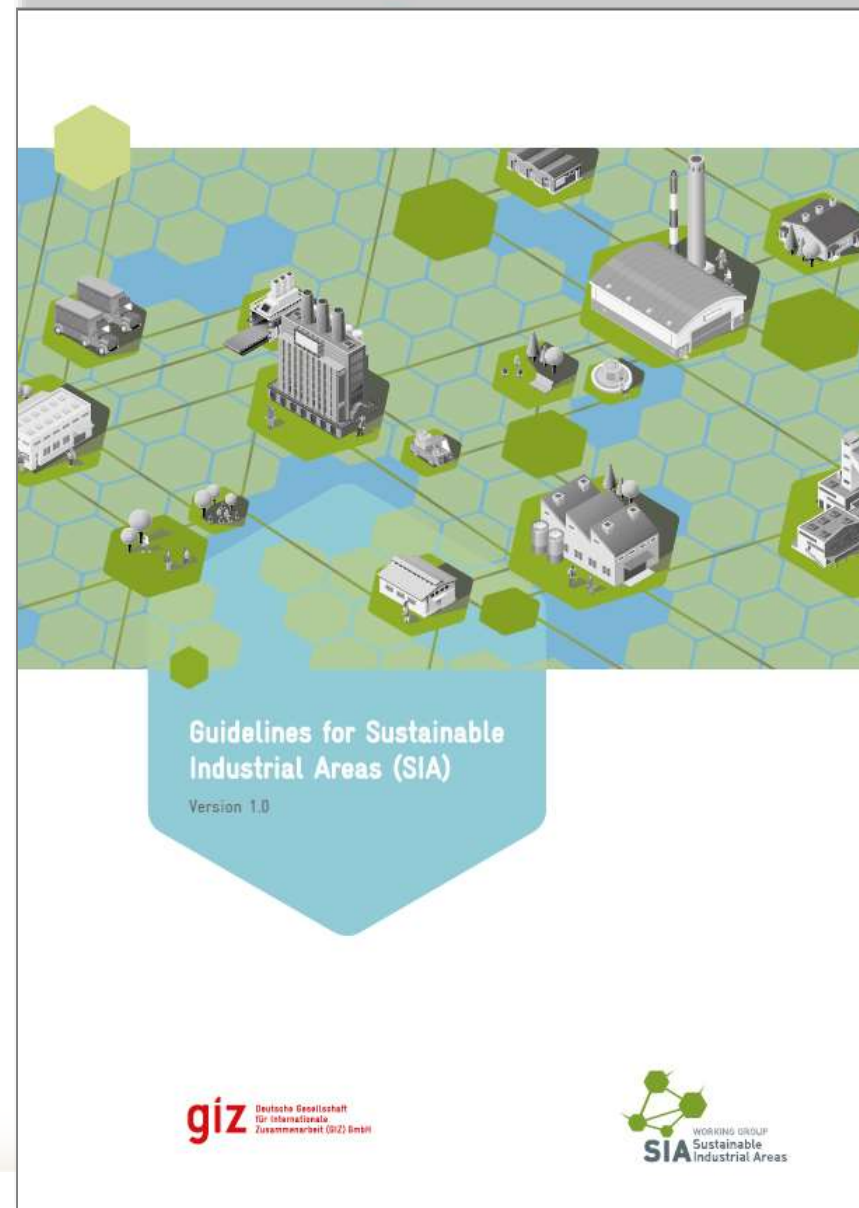
- Social inclusiveness
- Strong vision for transformation of production patterns



SIA Guidelines



- Developed by GIZ working group
- Guidance for national processes
- Stimulant for international initiative
- Invitation to comment and discuss with us





GIZ Guidelines for SIA

Organizational Features

- Site Master Planning
- Management Structure
- Service Orientation
- Networking & Cooperation
- Participation in Planning and Operation
- Maintenance, Cleaning & Retrofitting
- Disaster Risk Management

Economic and Infrastructure Features

- Economic Viability of Management & Site Marketing
- Fiscal Effects on the Municipality
- Infrastructure Provision & Logistics in General
- Energy Generation & Distribution
- Waste Management
- Water & Wastewater Management
- Transport System

Industrial Symbiosis / Resource Efficiency

Environmental Features

- Stewardship for Environmental Laws & Standards
- Promotion of Resource Efficiency & Industrial Symbiosis
- Monitoring & Control of Emissions
- Groundwater & Soil Protection
- Promotion of Biodiversity
- Efficient Land Use
- Climate Change Mitigation & Adaptation

Social Features

- Social Infrastructure
- Promotion of Lodging Standards
- Security Concept
- Promotion of Working & Occupational Health Standards
- Promotion of Gender Equality
- Encouragement of Trade Unions & NGOs



Thank you very much !





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