

JICA Project for Development of an Industry Strategy in Zambia

Concluding Presentation

*“The Hub of Manufacturing of
Engineering Products in the Region”
Strategy Implementation:
Promotion of the Zambian
Iron and Steel Industry*

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Project Background (1)

- **Goal and outputs expected to be achieved by the Experts' Work (by the JICA Project)**

1. **Project Purpose:** MCTI and ZDA become capable of **formulating an industry strategy and action plans.**

2. **Expected Two (2) Outputs:**

- (1) MCTI and ZDA's capacities for formulation of an industry strategy are enhanced through the drafting of a strategy in the engineering products sector. *(completed in April 2012)*

- (2) MCTI and ZDA's capacities for development of action plans are enhanced through formulation of action plans in specific target areas of the engineering products sector.

➡ 3 Experts contribute to the achievement of Output 2.

Project Background (2)

- 1st Phase of the Project (2 Experts: Iwase & Sawaki) was conducted between October 2011 and April 2012

➔ **formulated “Industry Strategy for Engineering Products”**

- This is the follow-up (2nd phase) for accelerating the *implementation of the formulated Industry Strategy.*

- Focus on the 2 issues for the development of Action Plan

(1) Acceleration of further development/investment promotion for **DRI (Direct Reduced Iron)** production:

➔ Strategy 5: “Promotion of FDI in target segments”

(2) Design and pilot implementation of **Iron and Steel Technology Training**

➔ Strategy 8: “Creation of culture of training”

Project Background (3)

Industry Strategy (2012) for Engineering Products (Formulated 8 Strategies for 5 years: 2012-2017)

1. Create a level playing field
2. Ensure quality products
3. Accelerate the increase of production capacities of the existing exporting companies
4. Nurture local supporting industries serving for exporting companies
5. Improve realization of FDIs in target segments
6. Enforce safety and environmental safeguard standards
7. Create new markets
8. Create a culture of training

Project Background (4)

Industry Strategy (2012) for Engineering Products (Overall Objectives)

- Expand the competitive industrial base of engineering products by increasing the number of exporting companies and expanding their production levels (capacities).
- Become the regional manufacturing base of engineering products.
- Through this process, nurture local suppliers (MSMEs) and skilled labor (workers) necessary for further development and diversification of the manufacturing base.

Project Background (5)

Industry Strategy (2012) for Engineering Products (Target Sectors)

Copper Fabrication and Iron/Steel sectors were selected:

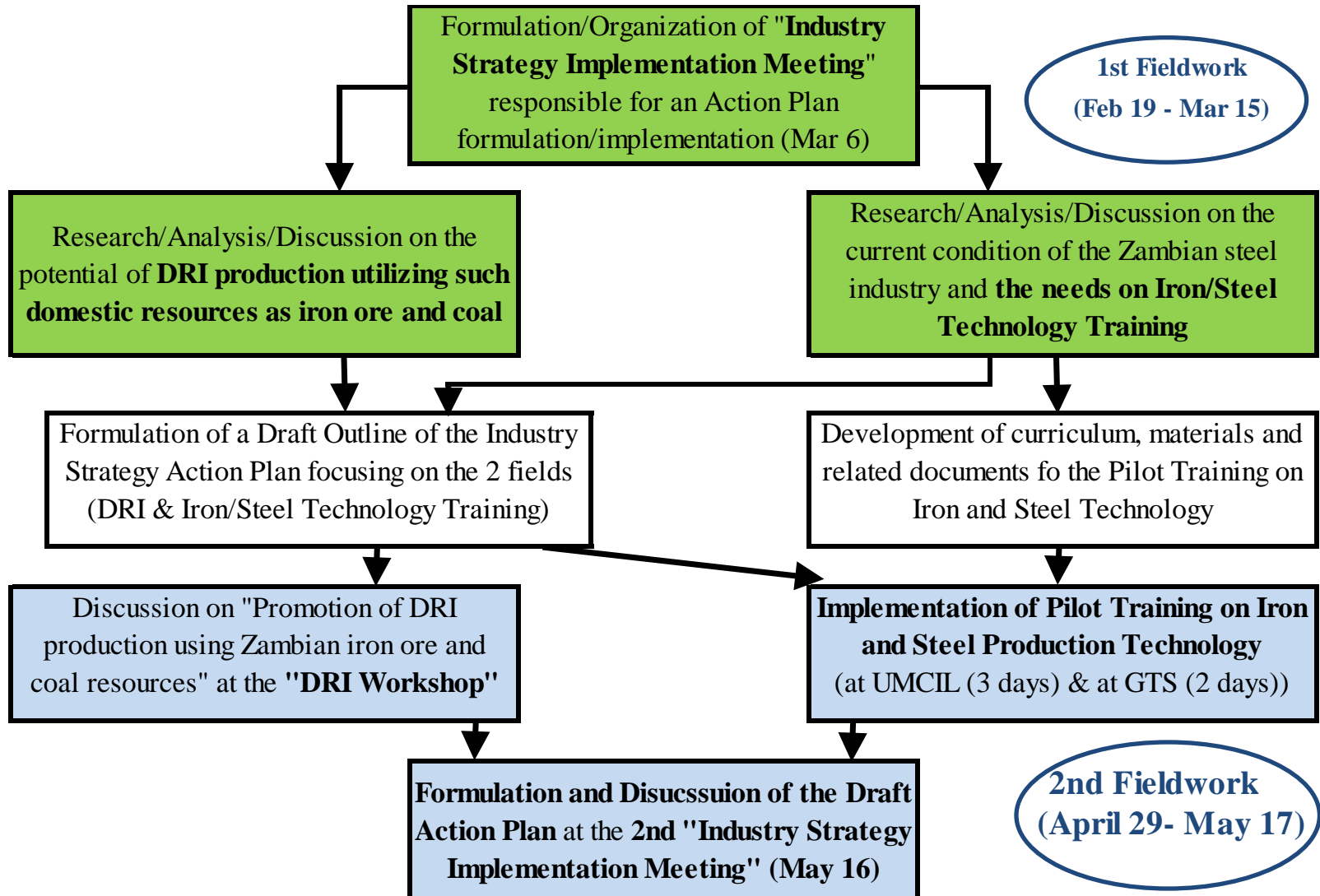
- Zambia has rich resources of copper, iron ore and coal, and has huge potential for developing resourced-based manufacturing.
- Several steel making and copper fabrication companies have emerged dynamically in Zambia over the last five years.
- Zambia needs quality, cost-effective raw material suppliers such as steel products in the local manufacturing (supply) chain, which also benefits secondary manufacturers/assemblers, mainly of MSMEs.
- Developing the target sectors, particularly Iron/Steel, will generate large spill-over effect to all the manufacturing sectors, which leads effective industrial development.
- Consumption for basic materials such as steel products in Zambia and SADC will increase, particularly in construction sector.

Project Background (6)

- **Major Issues/Areas to be considered in the current Experts' activities**
 - (1) Emphasis on accelerating the Private Sector Dynamism
 - For improving hard/soft infrastructure for the growth of companies
 - For increasing linkages among relevant industries/companies
 - (2) Strengthening of Institutional and Organizational Mechanism for formulating/implementing Structure of Action Plan of the Industry Strategy (Industry Council & ZISF)
 - (3) Development of a Draft Action Plan that attends to the issues in Environmental Conservation and Labor Safety

- **Project Period : February 2013 – May 2013**
(Overall project period: October 2011 – May 2013 (20 months))

Project Activities (Workflow)



Reminder-1:

Action Plan and Implementation Schedule defined under the Strategy (2012)

(Strategy-5 : Improve realization of FDIs in target segments)

Actions	Implementation Agency	Year 1	Year 2	Year 3	Year 4	Year 5
		I II III IV	I II III IV	I II III IV	I II III IV	I II III IV
5. Improve realization of FDIs in target segments.						
(i) Realize investment in copper sheet.						
1. Identify foreign investors.	ZDA	█				
2. Negotiate terms of investment.	ZDA		█			
3. Enter into agreement.	ZDA			█		
(ii) Realize investment in zinc ingot.						
1. Identify foreign investors.	ZDA	█				
2. Negotiate terms of investment.	ZDA		█			
3. Enter into agreement.	ZDA			█		
(iii) Realize investment in DRI.						
1. Identify foreign investors.	ZDA	█				
2. Negotiate terms of investment.	ZDA		█			
3. Enter into agreement.	ZDA			█		
(iv) Find and approach more target investments.						
1. Identify new target investments.	ZDA		█			
2. Identify foreign investors.	ZDA			█		
3. Negotiate and enter into the agreement.	ZDA				█	

Reminder-2:

Action Plan and Implementation Schedule defined under the Strategy (2012)

(Strategy-8 : Create a culture of training)

Actions	Implementation Agency	Year 1	Year 2	Year 3	Year 4	Year 5
		I II III IV	I II III IV	I II III IV	I II III IV	I II III IV
8. Create a culture of training.						
(i) Conduct a pilot project for training.						
1. Design a pilot project.	MCTI/ZDA	■				
2. Conduct a workshop for the stakeholders.	MCTI/ZDA		■			
3. Implement a pilot project.	MCTI/ZDA		■	■		
4. Conduct it in a sustainable form.	MCTI/ZDA			■	■	■
(ii) Introduce "Kaizen" to the industries.						
1. Introduce the candidates to the Kaizen team.	MCTI/ZDA	■	■	■	■	■
2. Implement "Kaizen" to each candidate.	MCTI/ZDA		■	■	■	■
3. Feedback the achievement in the conference.	MCTI/ZDA		■	■	■	■

Note: When Kaizen Institute of Zambia (KIZ) commences its effective operations, the Action 8-(ii) will be implemented by **KIZ with assistance of JICA.**

Reminder-3:

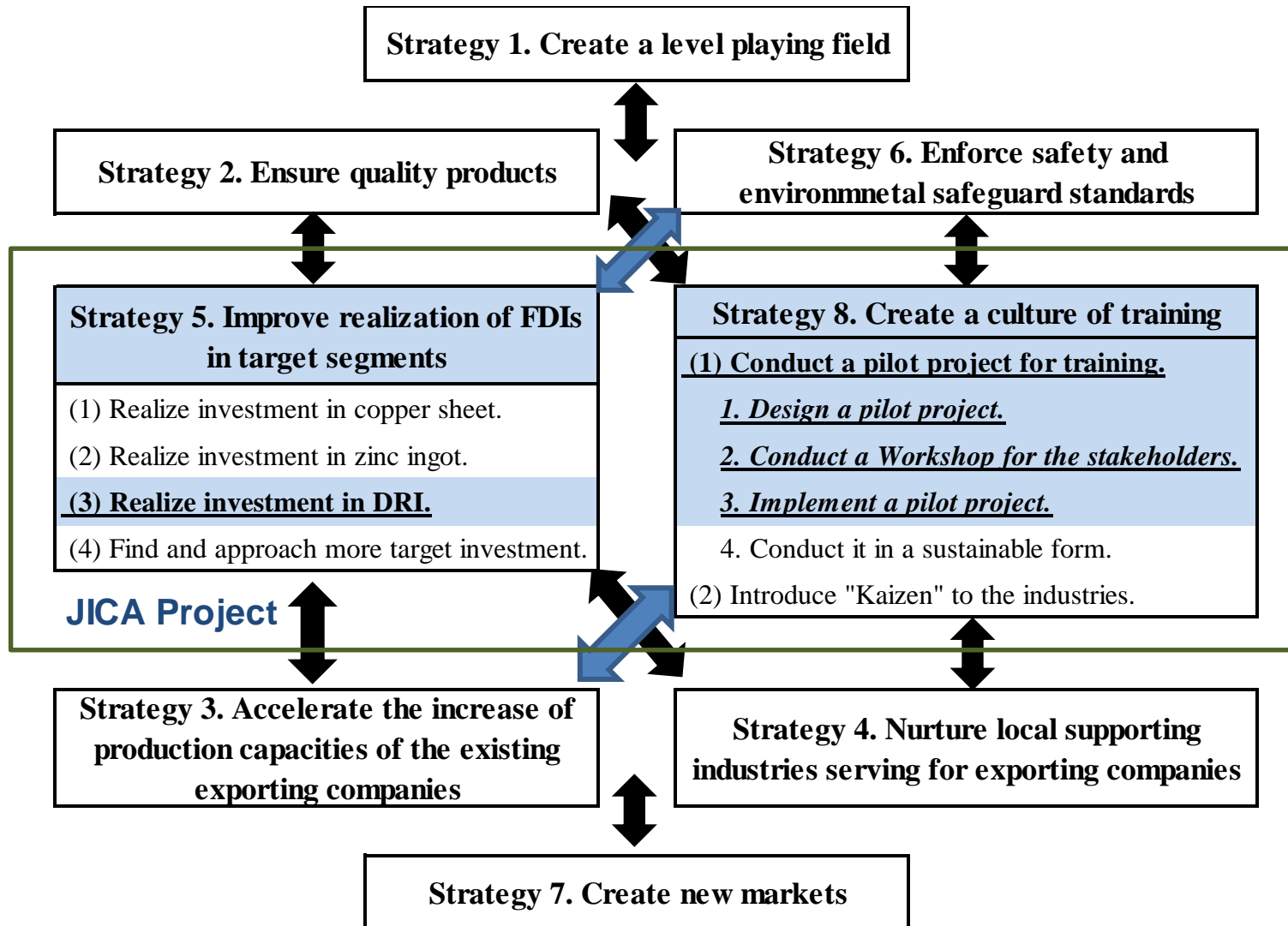
Monitoring of Strategy Implementation defined under the Strategy (2012)

- Target (numerical) indicators are to be set for monitoring.
- Action Plans will be monitored by each Implementation Agency.
- Annual review, Mid-term review and Final evaluation will be made by the Evaluation Team.

Actions	Implementation Agency	Year 1	Year 2	Year 3	Year 4	Year 5
		I II III IV	I II III IV	I II III IV	I II III IV	I II III IV
Overall review and monitoring.						
1. Set target indicators for the strategy period.	MCTI/ZDA	■			■	
2. Conduct annual review of strategy.	MCTI/ZDA		■	■		■
3. Conduct mid term review of strategy.	MCTI/ZDA			■		
4. Revise strategy, if necessary.	MCTI/ZDA				■	
5. Evaluate the overall performance of the strategy.	MCTI/ZDA					■

- **“Industry Council for Engineering Products” participated by the Private Sector will conduct overall monitoring and consultation.**

Starting the Strategy Implementation (focus on 2 areas and expansion to other areas)



Analysis of Steel Market

(Estimation of consumption)

- Although Zambia accelerates import substitution in “long” steel products, overall deficit in iron/steel is increasing.

(See [Table-1 in “Draft Action Plan” on page 6](#))

- Zambia’s steel consumption will grow at annual +7~8%.
- The Region (Zambia + 6 Neighbors) will have 6 million tons of steel consumption toward 2030 (annual +6~8%).

(See [Table-3 in “Draft Action Plan” on page 10](#))

- Competition for leading the development of Iron/Steel Industry will be accelerated among Tanzania, Mozambique and Zambia.

 ***Need concrete and quick actions by Zambia***

Direction for promotion of the Zambian Iron & Steel Industry (1)

- To become the leading Iron/Steel Producing Country in inland area of SADC
(2nd-largest Steel Producer in SADC)
- To become the **Center of Iron Resource (DRI) Production** in the region
- To become **Net Exporter in Iron/Steel**
- To promote linkage of value addition in Iron/Steel Industry and to **increase multiplying effect to the economy**

Target for Promotion of the Zambian Iron & Steel Industry

- 2 Stages for the Promotion -

Stage 1: Establishment of Solid Foundation of integrated iron and steel industry (**by 2017**)

➡ DRI production: 500,000 t, Steelmaking: 400,000 t

Stage 2: Expand and diversify the integrated iron and steel industry (**by 2030**)

➡ DRI production: 1.5 mill. t, Steelmaking: 1.3 mill. t

Toward 2030

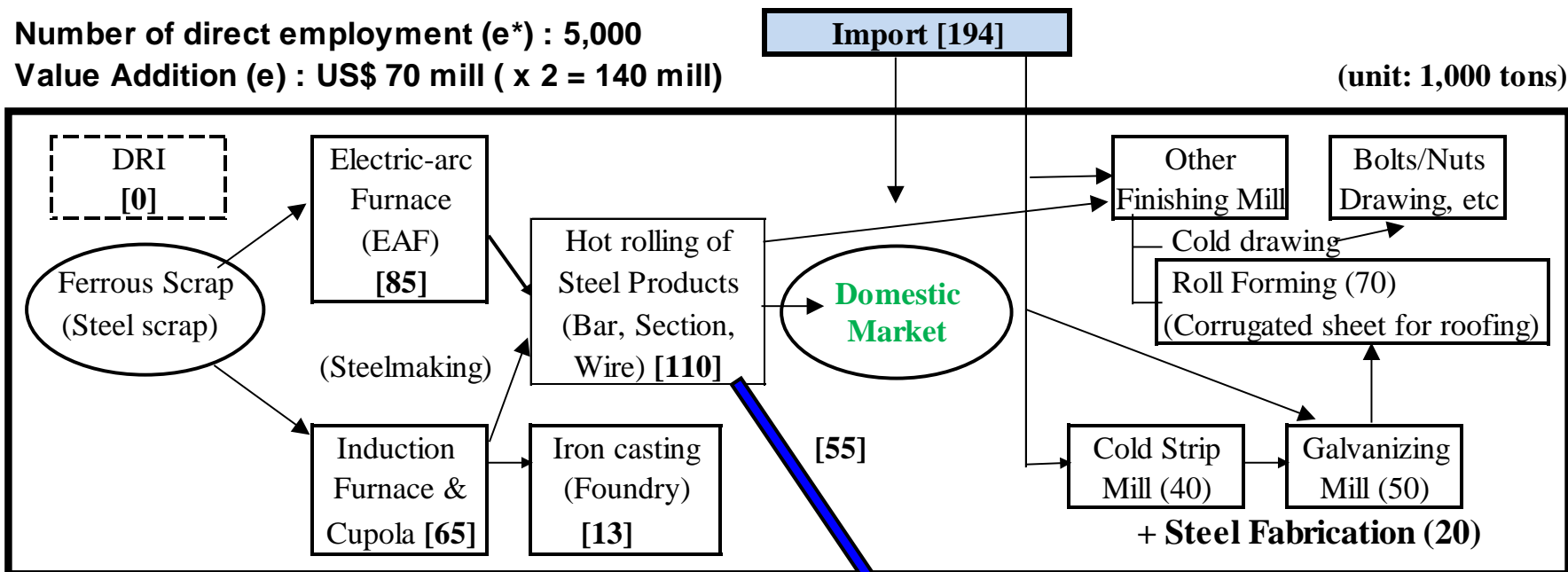
- **Create 100,000 new employment**
- **Create US\$ 2 billion of Value per year**

Creation of Employment and Value Addition (current situation: 2012)

2012

Zambian Iron and Steel Industry in 2012

Number of direct employment (e*) : 5,000
Value Addition (e) : US\$ 70 mill (x 2 = 140 mill)



e*: Estimation. Figures in () are production volume (except for numbers of Import & Export) in 1,000 tons.

Export [68]

Net Export = -126

Creation of Employment and Value Addition by DRI production (in 2017)

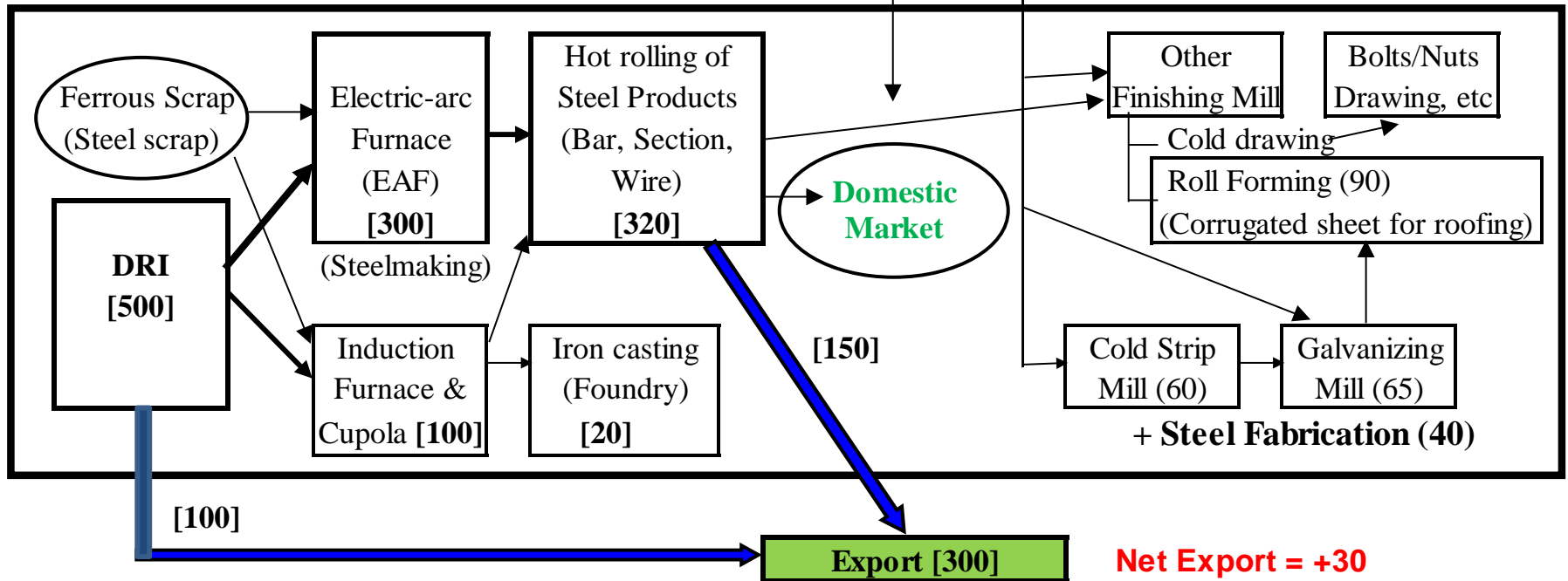
2017

Zambian Iron and Steel Industry in 2017

Number of (direct) employment (e) : 10,000
 Value Addition (e) : US\$ 150 mill (x 3 = 450 mill)

Import [270]*

*: Annual 10% increase except for Long products.



e*: Estimation. Figures in () are production volume (except for numbers of Import & Export) in 1,000 tons.

Creation of Employment and Value Addition by DRI production (in 2030)

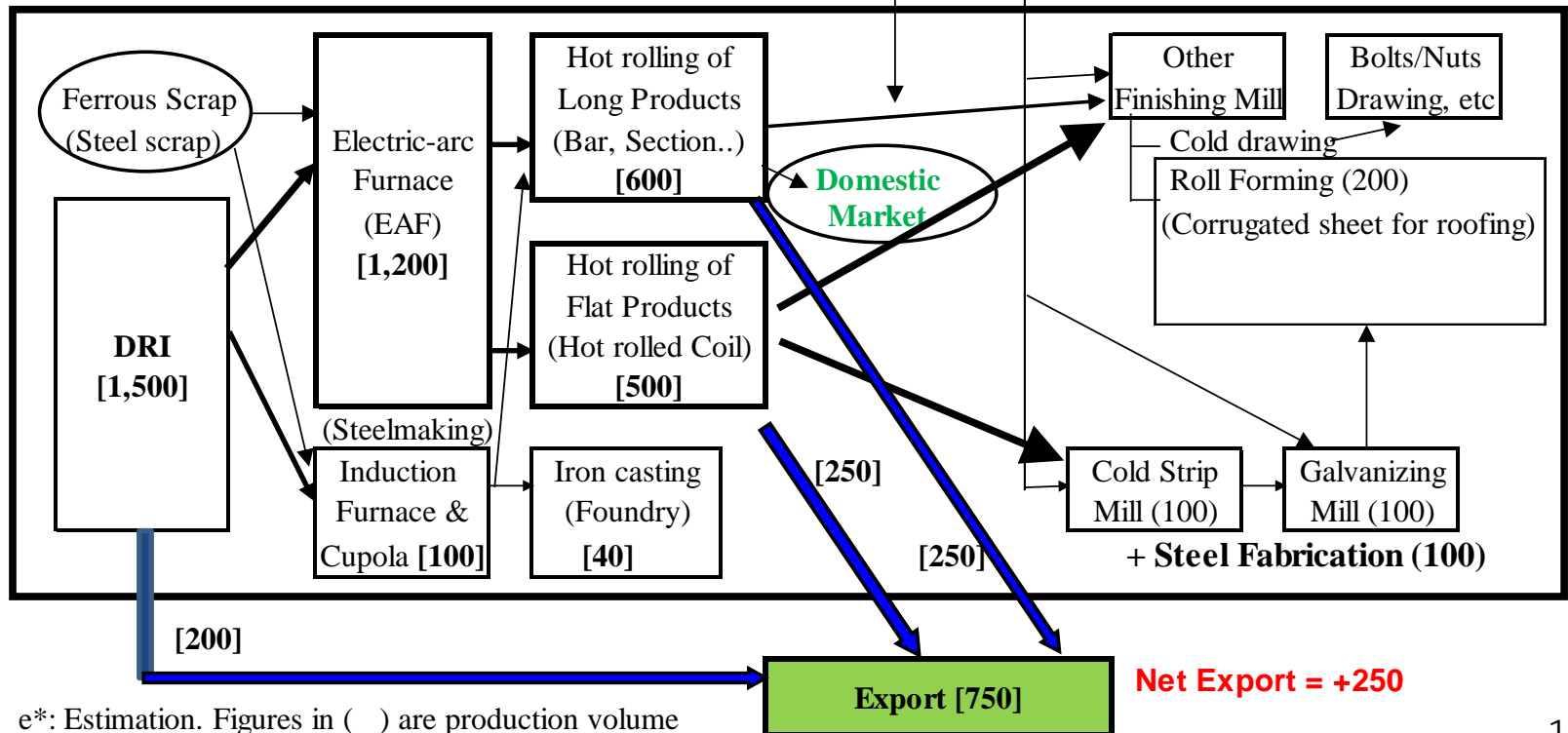
2030

Zambian Iron and Steel Industry in 2030

Number of direct employment (e) : 20,000
 Total employment generation could be 100,000.
 Value Addition (e) : US\$ 400 mill (x 5 = 2 billion)

Import [500]**

** : Annual 5% increase except for Long products, while import substitution progress in Flat products.



e*: Estimation. Figures in () are production volume (except for numbers of Import & Export) in 1,000 tons.

Concrete Action Plan - 1

“Strengthen institutional/organizational mechanism”

- Declaration of MCTI’s will and commitment is the Key.
- Industry organization is required as a Window.

Action Plans (Y: Year)	Implementing Agency	Y1 (2013)	Y2 (2014)	Y3 (2015)	Y4 (2016)	Y5 (2017)
		I II III IV	I II III IV	I II III IV	I II III IV	I II III IV
1. Strengthen institutional and organizational mechanism						
(1) Declare policy & commitment of MCTI for promotion of the Zambian Iron and Steel Industry	MCTI	■				
(2) Establish and organize meetings of "Industry Council for Engineering Products"	MCTI	■	■	■	■	■
(3) Establish Zambia Iron and Steel Federation (ZISF) with fomulation of Technical Committee (TC*)	MCTI Companies	■				
(4) Organize meetings of TC, share information and discuss on market, technology and HRD**	MCTI Companies		■	■	■	■
(5) Request foreign technical assistance for enhancing the organization/function of ZISF	MCTI ZISF		■			
(6) Implement/Enhance meetings & programs organized by ZISF and member companies (with technical assistance by donor/foreign Iron/Steel associations)	MCTI ZISF		■	■	■	■

Note * "Technical Committee " (TC) is established under Zambia Iron and Steel Federation (ZISF).

** HRD: Human Resource Development

Concrete Action Plan - 1

Necessary Mechanism

1. Declaration by the Zambian Government
(for Promotion of Iron/Steel Industry)
➔ by the end of June 2013
2. Industry Council for Engineering Products
➔ by the end of July 2013
3. Zambia Iron and Steel Federation (ZISF)
➔ by the end of August 2013
4. Technical Committee under ZISF
➔ by the end of September 2013

Concrete Action Plan - 2

“Realize investment in DRI (Direct Reduced Iron)”

Action Plans (Y: Year)	Implementing Agency	Y1 (2013)				Y2 (2014)				Y3 (2015)				Y4 (2016)				Y5 (2017)			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2. Realize investment in DRI (Direct Reduced Iron)																					
(1) Define the basic concept of Master Plan Study for DRI production and the development of ISSEZ*																					
a. Define the potential/sources of iron ore and coal	MCTI/ZDA																				
b. Define the size of DRI plant with market analysis (with timeframe for expected expansion)	MCTI/ZDA																				
c. Define the potential location of ISSEZ (in Kafue)	MCTI/ZDA																				
d. List up necessary supporting industries	MCTI/ZDA																				
(2) Allocate the government budget for conducting comprehensive Master Plan Study	MCTI																				
(3) Request international assistance to prepare the comprehensive Master Plan	MCTI/ZDA*																				
(4) Conduct the Master Plan (the Plan) Study for DRI production and the development of ISSEZ	MCTI/ZDA																				
(5) Allocate the government budget for constructing ISSEZ and its infrastructures according to the Plan	MCTI																				
(6) Request international financial support to construct ISSEZ and its infrastructures	MCTI/ZDA																				
(7) Prepare/Enforce laws and regulations for granting incentives to investors for DRI production and supporting industries located at ISSEZ	MCTI/ZDA, other Mins.																				
(8) Conduct investment promotion for DRI production and supporting industries located at ISSEZ																					
a. Prepare promotion materials (Sub-sector profile ++)	ZDA																				
b. Identify foreign investors (or local & JV partners)	ZDA																				
c. Promote clustering of local MSMEs at ISSEZ	MCTI/ZDA																				
d. Negotiate terms of investments	ZDA																				
e. Enter into agreements (Start-up of construction)	ZDA																				
(9) Construct ISSEZ and its infrastructures according to the formulated Master Plan	MCTI/ZDA, other Mins.																				

Note *: ISSEZ is "Iron and Steel Special Economic Zone" located in Kafue area, which ZDA declares for its establishment.

Concrete Action Plan - 3

“Create a culture of training for the development of the Iron and Steel Industry”

Action Plans (Y: Year)	Implementing Agency	Y1 (2013)				Y2 (2014)				Y3 (2015)				Y4 (2016)				Y5 (2017)			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
3. Create a culture of training for the development of the iron and steel industry																					
(1) Conduct a pilot project for training		■																			
a. Design a pilot project	MCTI																				
b. Conduct a workshop for the satakeholders	MCTI																				
c. Implement a pilot project (for Heating technology)	MCTI/Companies																				
d. Draw lessons learnt for Iron and Steel Training	MCTI																				
(2) Discuss and formulate annual plan for Trainers' Training for Iron and Steel Technology	Technical Committee (TC)*		■	■			■	■			■	■			■	■			■	■	
(3) Implement periodical Trainers' Training 2 times a year (starting with Heating furnace technology training)	TC/Companies						■		■		■		■		■		■		■		■
(4) Request foreign technical assistance for enhancing the implementatation of Trainers' Training	MCTI/ZISF**		■	■																	
(5) Improve/Expand Trainers' Training with technical assistance by donor & foreign iron/steel associations	ZISF/TC						■	■	■												
(6) Formulate/Expand Standard Operation Procedures (SOPs) in model production processes	Companies/TC						■	■	■						■	■	■				
(7) Strengthen SOP application with compliance with ZABS qualification	Companies/TC ZABS***										■	■	■		■	■	■				
(8) Strengthen SOP application with compliance with ZEMA rules and regulations	Companies/TC ZEMA****										■	■	■		■	■	■				

Note * : "Technical Committee " (TC) is established under Zambia Iron and Steel Federation (ZISF).

** : "ZISF" is Zambia Iron and Steel Federation.

*** : "ZABS" is Zambia Bureau of Standard.

** : "ZEMA" is Zambia Environment Management Agency.

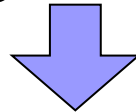
Infrastructure Development is requisite with GOVT's support

- Mumbwa-Lusaka-Kafue Railway Line
 - Transportation of Iron Ore
 - Transportation of agricultural products
 - Bulk transportation for rural development
 - Enhancement of electric power generation & stable supply to Kafue area
 - Mining exploration is to be enhanced
- ➔ Needs international assistance ?

Moving Forward for Strategy Implementation: Promotion of the Zambian Iron & Steel Industry

- Final Remark -

- All the relevant stakeholders should take initiatives & actions for their responsibilities.
- Should strengthen Communication, Cooperation & Collaboration among stakeholders.



- Let's initiate concrete Actions for the Implementing the formulated Industry Strategy:

“Hub of Manufacturing of the Engineering Products in the Region” : 2nd-largest Iron and Steel Producer in SADC

■ **The KEY is How the GVT (MCTI) shows its Will & Commitment inside/outside the country !!**