Training objectives and participant expectations
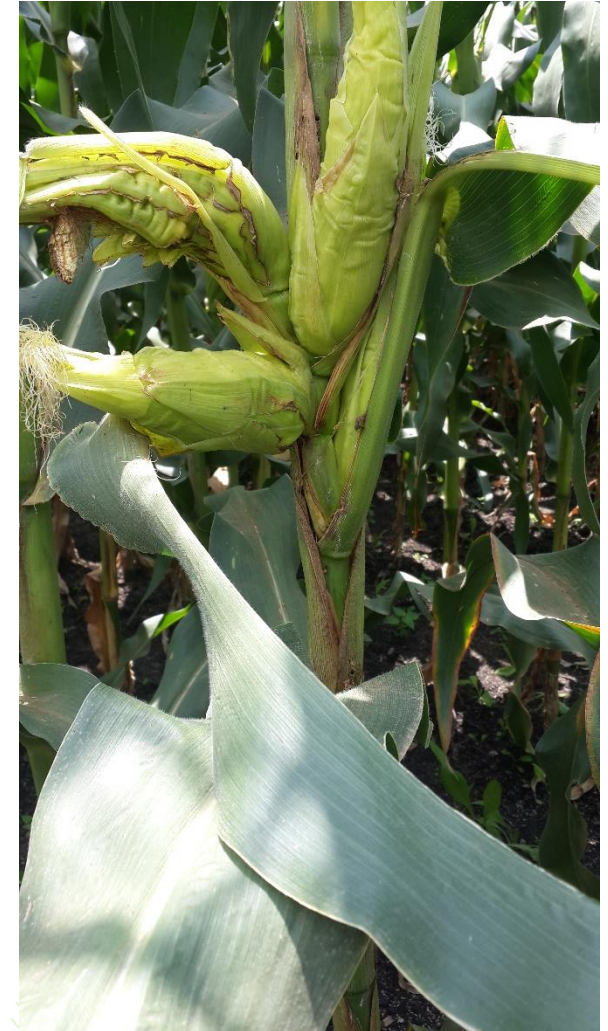

Kindie Tesfaye

Yield Gap Decomposition Training, 22-26 May 2023

Addis Ababa

CIMMYT

Contents

- Roel of Add-On and Use cases in EiA

- The Yield Gap Decomposition (YGD) Add-on

- Objectives of the YGD Add-on

- Framework on the use of YGD evidences in Use Cases

- Training objectives

- Expected outputs

- Expectations (?)

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Add-ons and Use Cases

Why Add-on activities?

Productivity

Yield stability/ reduced risk

Resource use efficiency

Soil health

Nutrition, Health, and Food Security

Poverty Reduction, Livelihoods, and Jobs

Environmental Health and Biodiversity

Gender Equality, Youth, and Social Inclusion

Climate Adaptation and Greenhouse Gas Reduction

A NEW ROADMAP FOR IMPACT TO 2030

CGIAR

#OneCGIAR

>> Maximize impact of the Use Cases across **KPIs** and **OneCGIAR Impact Areas**

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How do Add-Ons and Use Cases work together?
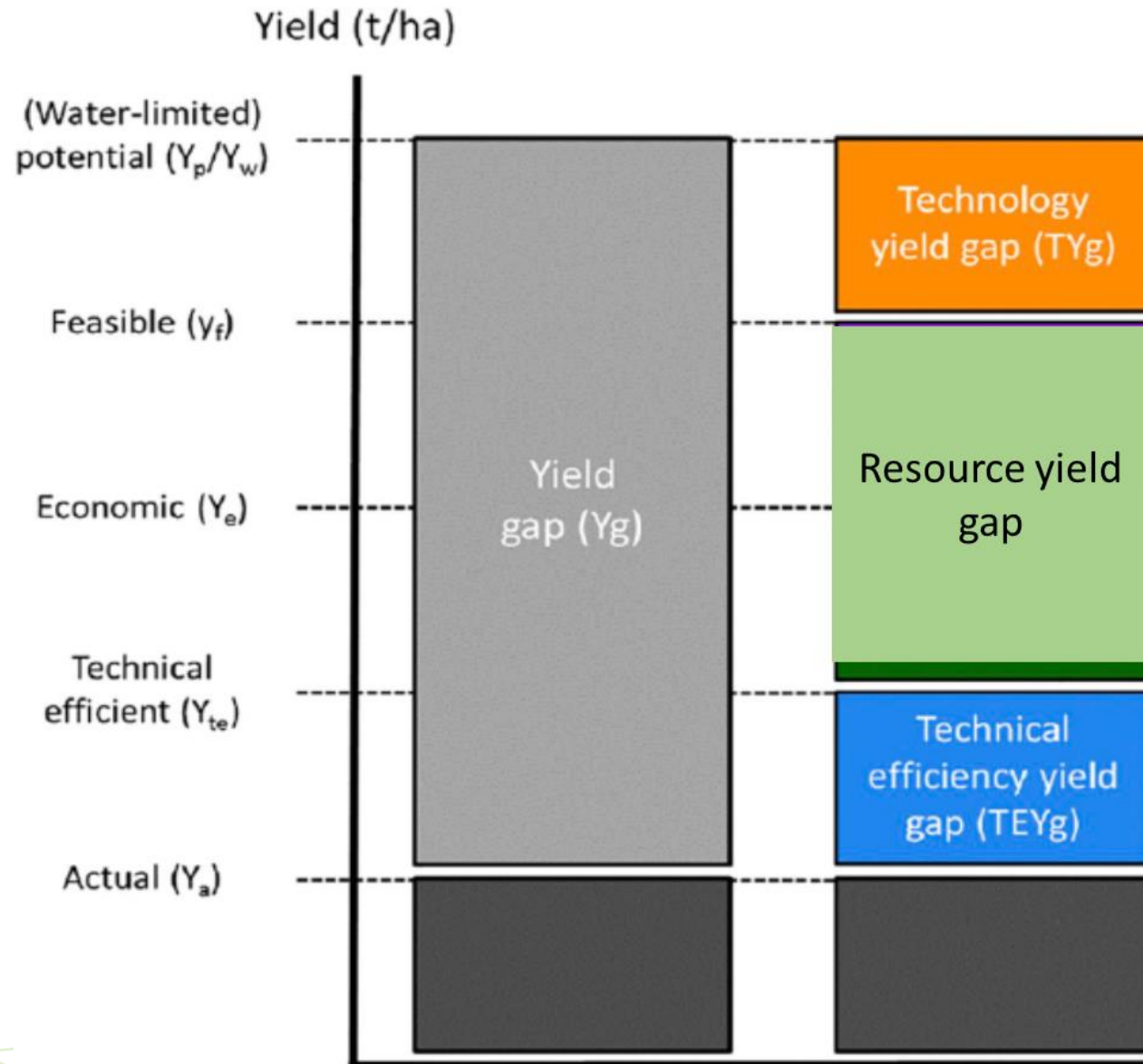
Add-on teams

- Design tool and analytical framework

- Capacity building and backstopping in use of tools

- Data analysis and co-publication

Use Case teams

- Use the tool

- Learn from results to improve the MVP and MVP scaling process

- Data collection and co-analysis of data and publication

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Yield gap decomposition Add-on

Van Dijk et al., 2020

Yield gap decomposition

Silva et al. (2017)
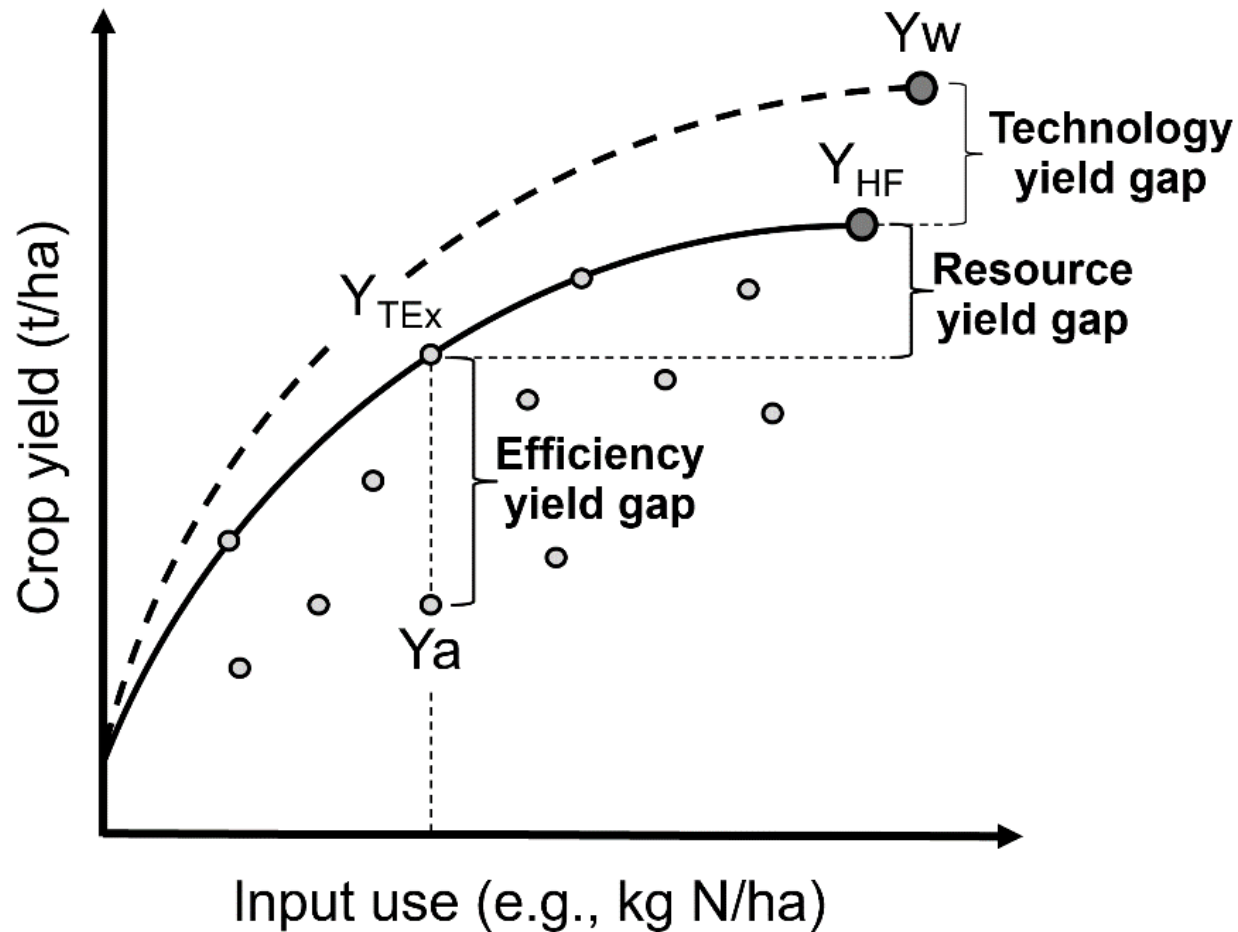
Ya = actual farmers' yields
- farm surveys: field level

Y_{HF} = highest farmers' yields
- top 10th percentile of Ya

Y_{TEx} = technical efficient yields
- stochastic frontier analysis

Yw = water-limited potential yield
- www.yieldgap.org

Objective of the YGD add-on

- to decompose yield gaps into different components

- to identify associated major factors that contribute to the gaps

- to influence positively the design and evaluation of the MVPs.

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Yield gaps, main causes and possible interventions
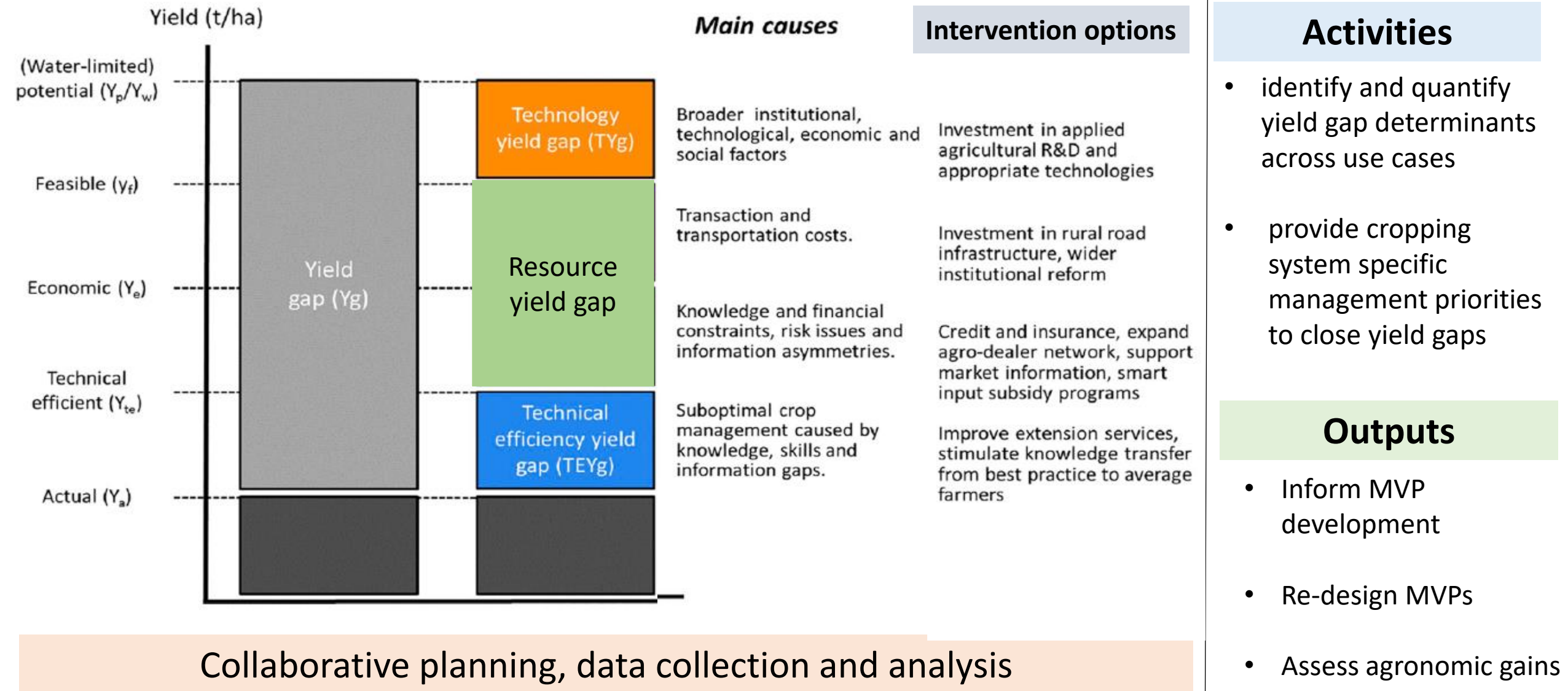

	Main causes	**Intervention options**
Technology yield gap (TYg)	Broader institutional, technological, economic and social factors	Investment in applied agricultural R&D and appropriate technologies
Resource yield gap	Transaction and transportation costs.	Investment in rural road infrastructure, wider institutional reform
	Knowledge and financial constraints, risk issues and information asymmetries.	Credit and insurance, expand agro-dealer network, support market information, smart input subsidy programs
Technical efficiency yield gap (TEYg)	Suboptimal crop management caused by knowledge, skills and information gaps.	Improve extension services, stimulate knowledge transfer from best practice to average farmers

Activities

- identify and quantify yield gap determinants across use cases

- provide cropping system specific management priorities to close yield gaps

Outputs

- Inform MVP development

- Re-design MVPs

- Assess agronomic gains

Collaborative planning, data collection and analysis

Van Dijk et al., 2020

Framework for the use of YGD evidence in Use Cases

(i) **Due diligence**- information on yield gaps and yield gap determinates can inform the <u>identification of agronomic problems </u>that can be addressed by developing an agronomic solution.

(ii) **Use case ideation**- evidence on yield limiting factors that cause yield gaps can be used to <u>prioritize agronomic problems </u>among the many factors that influence productivity of crops.

(iii) **Design of MVP** – information on yield gaps and the components of yield gaps shall be used to <u>design a clear MVP </u>that can address one or more yield limiting factors.

(iv) **Validation of the MVP-** knowledge of factors that contribute to yield gaps are useful to evaluate <u>the effectiveness (degree of influence) of the MVP </u>is addressing the major limiting factors.

(v) **Scaling the MVP** -spatially explicit yield gap decomposition results can be used to <u>identify areas where the MVP is potentially effective and scaled up</u>.

Training objectives

- Expose trainees to the basic concept of yield gaps and yield gap decomposition

- Discuss the different methods of yield gaps estimation and yield gap decomposition

- Discuss on minimum data requirements and data collection tool

- Provide hands on-exercise on yield gap decomposition methods and tools

- Establish a community of practice on yield gap and yield gaps decomposition

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Training Outputs

- Clarity on use case and add-on roles on YGD

- Common understanding on the concept of yield gap and yield gap decomposition and data collection and analysis methods

- Improved skill in the use of data collection and analysis tools.

- Start in a community of practice on yield gap and yield gaps decomposition that can expand across EiA

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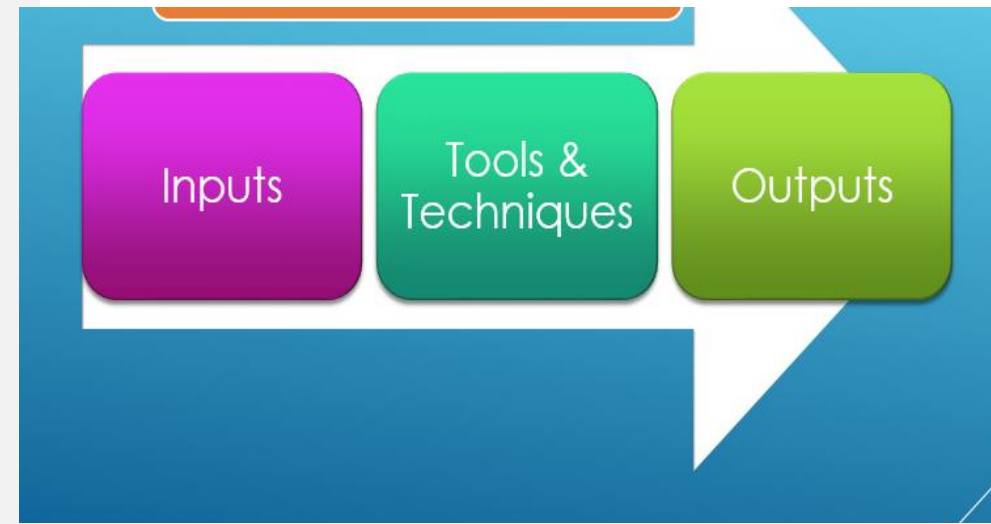
Trainee expectations

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Thank you for your interest!