



CBL COLA

TACATIC Conference

Johannesburg

21 & 22 October 2015





CBL COLA



Main result area 2:

- ATI's strengthened in their capacity to regularly review, develop and offer gender sensitive qualifications in response to labour market demands

Activity 2.1.1 and 2.1.2:

- Competency based education in higher education





CBL COLA



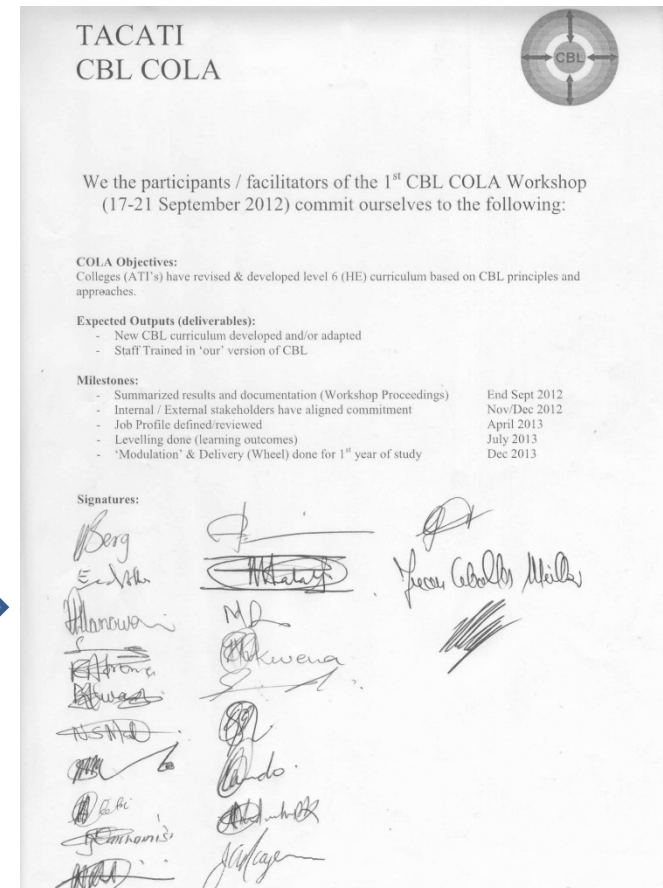
COLA Objectives:

- Colleges (ATI's) have revised & developed level 6 (HE) curriculum based on CBL principles and approaches

Expected Outputs (deliverables):

- New CBL curriculum developed and/or adapted
- Staff Trained in 'our' version of CBL

Commitment signed by all in
the beginning (2012)





ACTIVITIES



- 9 Colleges
 - Grootfontein, Fort Cox, Tsolo, Lowveld, Marapyane, Tompi, Madzi, OSCA & Cedara
- First Workshop (September 2012)
- Sensitization visit (December 2012)
- Round trip with 8 staff (March 2013)
- 2 day Training (June – August 2013)
- Grootfontein CBL finalization (January 2014)
- Status Workshop (June 2014)
- Individual workshops at Madzi & Tompi (July 2014)
- Tsolo material writing writeshop (August 2014)
- Subject Specific Workshop 1 (17 - 19 April 2015)
- Subject Specific Workshop 2 (25 – 27 June 2015)
- Finalization Workshop (18 & 19 October 2015)





Participation



ACTIVITY	DATE	COLLEGES	STAFF PARTICIPATING
Inception Workshop	17-21 Sep 2012	7	21
Sensitization visit	Nov 2012	8	101
Round trip	Mar 2013	8	129
Facilitation Training	June / July 2013	9	115
Grootfontein CBL finalization	Jan 2014	1	16
Facilitation Training	Apr 2015	1	14
Status Workshop	Jun 2014	8	10
CBL COLA input to QA COLA	Jul 2014		
Exchange Tompi / Cedara	Aug 2014	2	9
Tsolo material writing writeshops	Aug & Nov 2014	1	40
Facilitation Training	Sept 2014	2	35
Subject Workshop 1	Apr 2015	7	31
Subject Workshop 2	Jun 2015	7	25
Final Workshop	19-20 Oct 2015	9	15
TOTAL	59 Days		561



CBL Principles



- Producing graduates with the competences the labour market (potential employers) require, i.e. graduates that get a job
- Focusing just not on knowledge but also skills and attitudes
- Pursuing inter-relations between the subjects (horizontal integration) and building up the increasing complexity of a subject (vertical integration).
- Designing and delivering modules based on interactive learning
- Combination of knowledge, skills and attitudes requires integration and moving from teaching to facilitating learning.





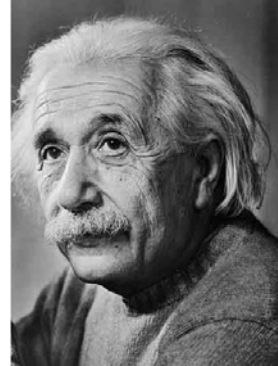
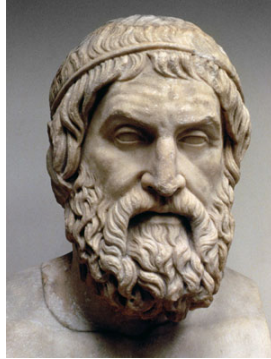
Doing and
understanding

Interactive learning

Learning by
doing

Information is not
knowledge

Learning
is active



"I hear and I
forget.

I see and I
remember.

I do and I
understand."

"One must learn by
doing the thing;
though you think
you know it, you
have no certainty
until you try".

*Sophocles,
495-406 BC*

"Knowledge is
experience,
everything
else is just
information"

*Albert Einstein,
1879 – 1955*

"I forget what I was
taught, I only
remember what I've
learnt."

*Patrick White, 1912-
90, Australian
novelist and 1973
Nobel Prize winner
for Literature*

*Confucius,
551-479 BC*





Basic principles of interactive learning



- Strive to enhance students' want to learn;
- Help students develop ownership of the need to learn;
- Help students learn by doing, practice, trial-and-error, repetition;
- Help students to make sense of what they learn.
- Ensure students get quick and useful feedback – from teachers and from each other;
- Get students deepening their learning by coaching other students, explaining things to them.
- Allow students to further deepen their learning by assessing their own learning, and assessing others' learning – making informed judgements.





Facilitating learning



- Use learners' experiences
- Take learners' professional needs into account
- Involve learners in the learning process
- Encourage personal and group reflection
- Use appropriate methods





Using appropriate methods



Hearing	Observing	Doing	Speaking	Writing	Reading
Lecture	Demonstration	Field visits	Debate	Tests	Articles
Discussion	Animations	Field trials	Panels	Exams	Books
Role play	Role play	Surveys	Interviews	Essays	Reports
Simulations	Simulation	Simulation	Simulation	Project reports	Journals
Theatre	Theatre	Tasks	Questioning	Short answers	Case studies
Documentaries	Documentaries	Problem solving	Role plays	Tasks	Novels





CBL Process

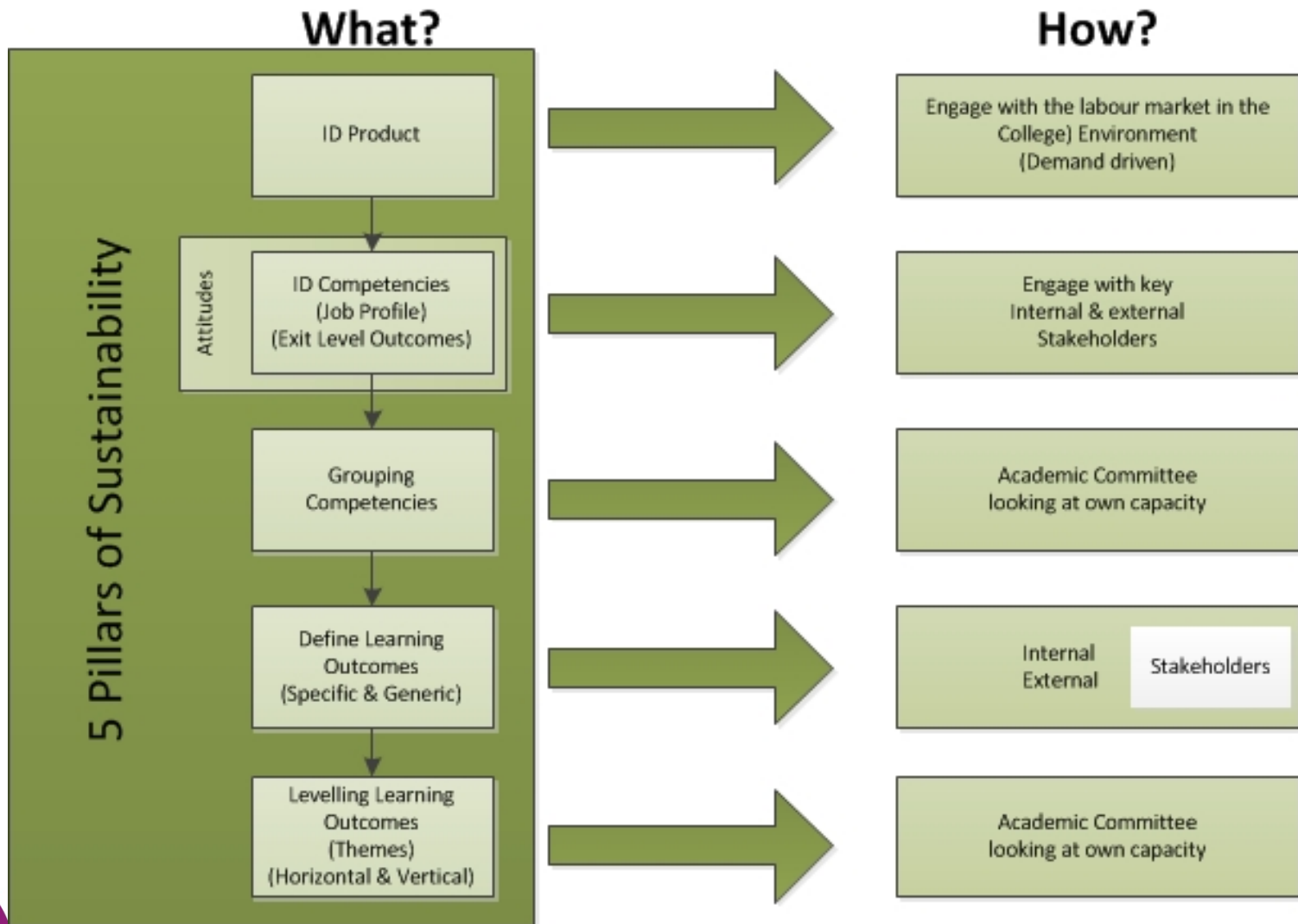


- Jointly defined CBL curriculum development process in September 2012
- Used Cedara College as a basis
- Each College to develop their own curriculum with industry roleplayers
- All Colleges agreed to use the Diploma and the competency of the farmer.



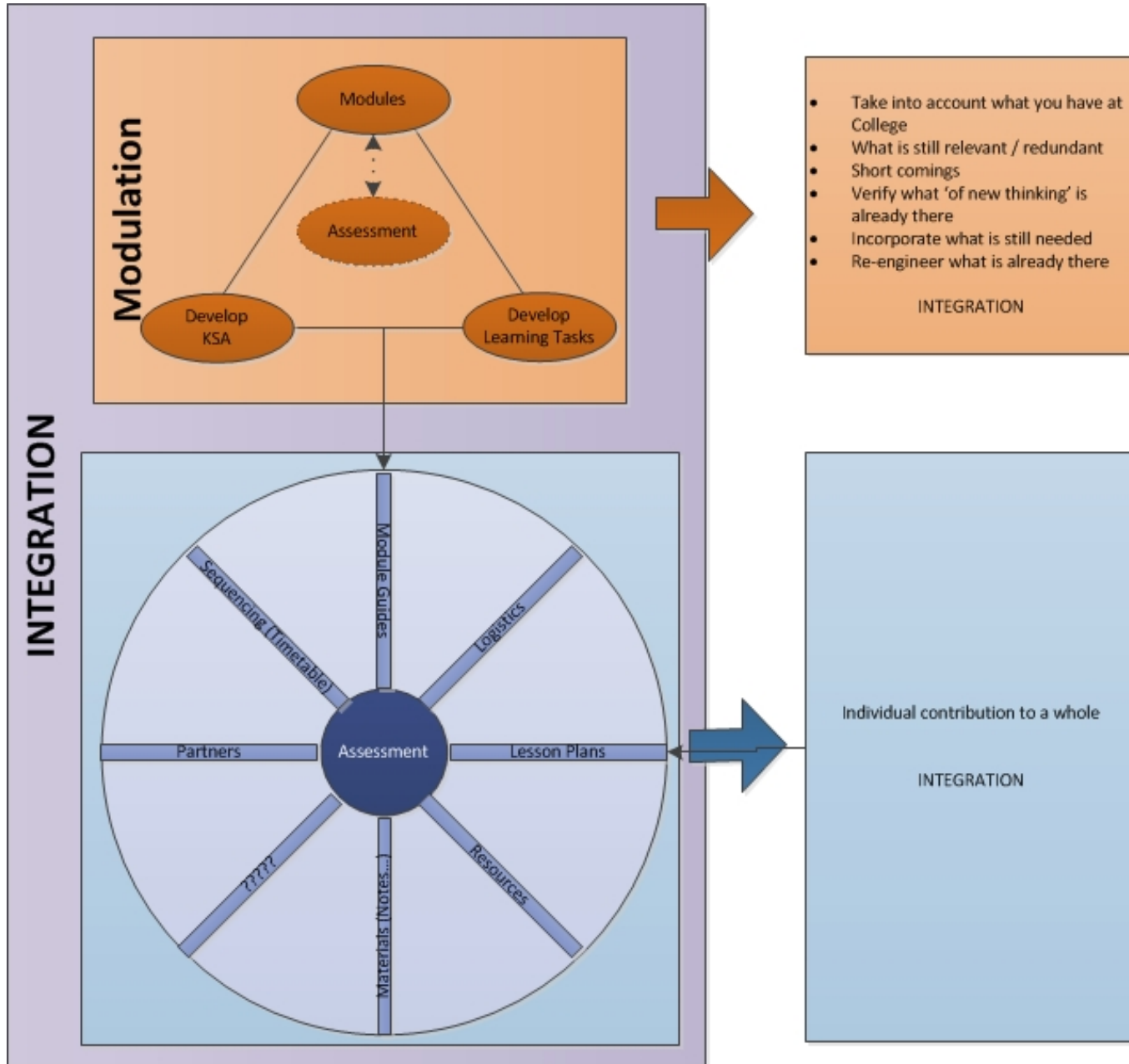


CBL Process















































































CBL Process

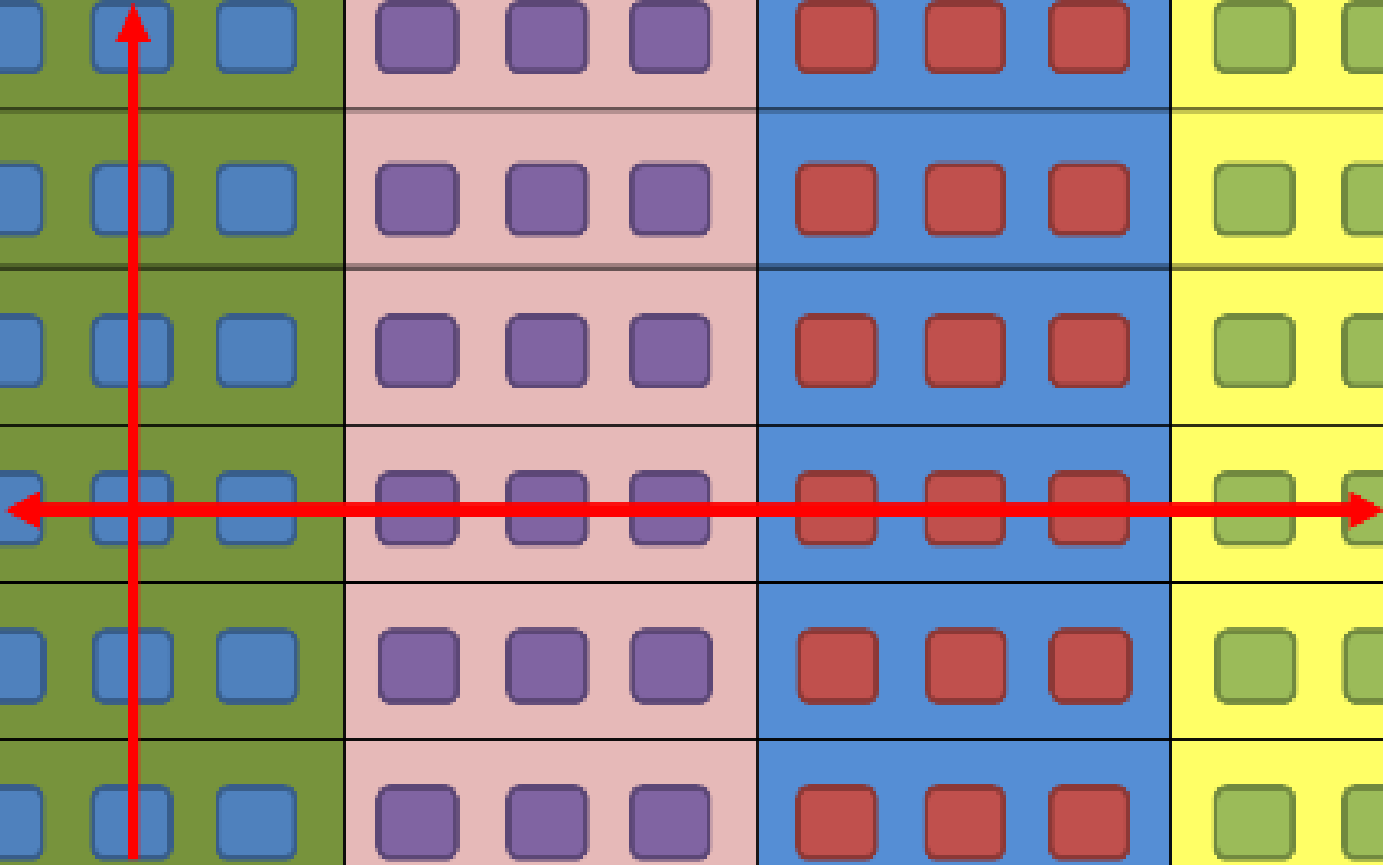




Curriculum Matrix



Sem	Learning Line 1	Learning Line 2	Learning Line 3	Learning Line 4
1	  	  	  	  
2	  	  	  	  
3	  	  	  	  
4	   	  	   	  
5	  	  	  	  
6	  	  	  	  





CBL Competency



A competent farmer should be able to:

Plan, organise and control resources (farm, natural, human, economic) in a sustainable manner and maximize profit taking into account social contexts.





CBL PROCESS



- Grootfontein implemented new curriculum in 2014
- Lowveld & Marapyane already implemented previously
 - Marapyane working on Animal Production (with CHE)
- 7 Colleges
 - Competencies confirmed: Farmer/Farm Manager
- Fort Cox working on NQF 7
 - Must use CBL principles
- Tsolo:
 - Animal Health Technician



CBL Curriculum MATRIX

THE FARMER									
A competent farmer should be able to plan, organise and control resources (farm, natural, human, economic) in a sustainable manner and maximize profit taking into account social contexts.									
LL	Animal Production	Crop Production	Agricultural Economics / Business Management	Soil Science	Vegetation (Veld & Pastures)	Engineering (Civil & Mechanical)	Agro Processing	Innovation Capacity	
EXIT LEVEL	Must be able to: Make sound decisions based on best animal production techniques and practices to maximize profit in a sustainable manner	Must be able to: Make sound decisions based on best crop production techniques and practices to maximize profit in a sustainable manner	Must be able to: Make sound decisions based on economic and management principles to maximize profit	Must be able to: Optimally utilize the soil without degradation (sustainable use)	Must be able to: Optimally manage veld and pasture in a sustainable manner to maximize profitability	Must be able to: Optimally utilize equipment and infrastructure to maximize productivity	Must be able to: Apply safety and quality standards in the handling, preservation, processing & packaging of crop and animal products	Must be able to: Operate effectively in a complex, dynamic development context	
SPECIFIC COMPETENCIES	<ul style="list-style-type: none"> Understand animal breeding Understand nutrition, health and welfare in animals Apply basic veterinary techniques Apply basic animal husbandry techniques Understand animal reproduction Evaluate (different) animal production systems Identify opportunities for adding value Understand changes in animal requirements Formulate production plan using standard recommendations Monitors and evaluates a production plan against production standards Customize production plan to suit specific farm conditions and production objectives 	<ul style="list-style-type: none"> Understand crop selection Understand crop nutrition and plant health Apply basic propagation techniques Apply basic crop husbandry techniques Evaluate plant production systems Apply post-harvest (primary processing) and storage techniques Understand crop requirements Understand ecological sustainability concepts and regulations Understand and identify different plant and plant parts (morphology) Identify opportunities for adding value Formulate production plan using standard recommendations Monitors and evaluates a production plan against production standards Customises production plan to suit specific farm conditions and production objectives 	<ul style="list-style-type: none"> Compile and analyse financial statements Keep production records and compile farm budgets Apply basic principles of risk management Apply entrepreneurship principles Apply human resource management principles Understand the external policy environment and its impact on the business Identify and analyse different marketing strategies and channels Understand and optimise the factors (land, labour and capital) of production Apply project management principles Analyse farm business and apply sound business management practices Develop and evaluate a customised, comprehensive business plan 	<ul style="list-style-type: none"> Understand and analyse the natural resources (Soil, Veld, Water, Climate) Understand and interpret soil survey Undertake soil sampling and soil fertility management Implement sustainable agricultural practices with regards to erosion and tillage practices Understand the soil conservation act and manage soils accordingly Understand basic properties of soil 	<ul style="list-style-type: none"> Know and understand natural resources Understand and know how to manage different plants, veld types and grazing systems Determine the grazing capacity and stocking rate etc. Manage cultivated pasture Understand and implement veld restoration / improvement Understand and implement feed conservation and fodder flow planning Understand regulations regarding rangeland and forage management 	<ul style="list-style-type: none"> Design and maintain simple animal housing, crop storage and facilities Design and maintain other farm structures (dams, roads, fencing...) Design, construct and maintain soil and water conservation structures (contours, waterways...) Do basic construction practices (concrete, bricklaying...) Identify, select, calibrate, maintain and operate farm machinery & equipment Do basic workshop and on farm practices (welding, carpentry, farm electricity, plumbing...) Understand irrigation planning and installation Do irrigation scheduling and basic maintenance Do basic design of drainage systems 	<ul style="list-style-type: none"> Identifying opportunities for adding value Use appropriate handling, preservation and processing methods Apply regulations (safety, quality, health...) in preservation and processing of agricultural products Select appropriate packaging materials Store products according to requirements 	<ul style="list-style-type: none"> Communicate effectively through a variety of means Be innovative in socio-technical platforms Identify, evaluate and adapt innovations to circumstances Monitor, evaluate and analyse their own and external socio-technical variables Function in a variety of groups and environments Identify own role in rural development setup and play an active role (collaborative) in development initiatives 	
BASIC MODULE PROGRESSION	Module Topics								
		Production Planning							
		Plant Propagation	Risk in Agriculture						
	Production Planning	Production Systems (cultivar / crop selection)	Entrepreneurship		Fodder flow planning (unknown environment)				
	Animal Breeding & Selection	Post-Harvest Technology	Production Economics	Natural Resource Assessment	Fodder flow planning (known environment)				
	Animal Nutrition & changes in animal requirements	Land Preparation	Budgeting	Soil Survey (classifications) & mapping	Veld management				
	Animal Health, welfare and biosecurity	Crop Health and Crop Protection	Project Management	Soil Fertility	Cultivated Pastures				
	Animal Production Systems	Crop Nutrition	Human Resource Management	Soil properties (texture, structure, moisture...)	Rangeland Regulations	Drainage	Machinery & repairs	Crop & Animal Structures	
	Basic Anatomy & Physiology	Basic Morphology & Physiology	Marketing	Basic concepts in Soil Science	Veld Types and Biomes	Irrigation Scheduling	implement operations	Roads	
	Genetics / Systems Thinking / Farming Systems		Farm Accounting & record keeping	Soil Genesis	Natural Resources Management	Design & installation	ID & selection	Fencing	
	Basic Calculations / Biology / Physics / Genetics / Language								

	Animal Production Competency Profile
	Must be able to:
Competency	Make sound decisions based on best animal production techniques and practices to maximize profit in a sustainable manner
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Understand animal breeding • Understand nutrition, health and welfare in animals • Apply basic veterinary techniques • Apply basic animal husbandry techniques • Understand animal reproduction • Evaluate (different) animal production systems • Identify opportunities for adding value • Understand changes in animal requirements • Formulate production plan using standard recommendations • Monitors and evaluates a production plan against production standards • Customize production plan to suit specific farm conditions and production objectives
	Module Topics
Basic Module Progression	<div>Production Planning</div> <div>Animal Breeding & Selection</div> <div>Animal Nutrition & changes in animal requirements</div> <div>Animal Health, welfare and biosecurity</div> <div>Animal production systems</div> <div>Basic Anatomy & Physiology</div> <div>Genetics / Systems Thinking / Farming Systems</div> <div>Basic Calculations / Biology</div>

	Crop Production Competency Profile
	Must be able to:
Competency	Make sound decisions based on best crop production techniques and practices to maximize profit in a sustainable manner
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Understand crop selection • Understand crop nutrition and plant health • Apply basic propagation techniques • Apply basic crop husbandry techniques • Evaluate plant production systems • Apply post harvest (primary processing) and storage techniques • Understand crop requirements • Understand ecological sustainability concepts and regulations • Understand and identify different plant and plant parts (morphology) • Identify opportunities for adding value • Formulate production plan using standard recommendations • Monitors and evaluates a production plan against production standards • Customises production plan to suit specific farm conditions and production objectives
	Module Topics
Basic Module Progression	<div>Production Planning</div> <div>Plant Propagation</div> <div>Production Systems (cultivar / crop selection)</div> <div>Post harvest technology</div> <div>Land Preparation</div> <div>Crop Health and Crop Protection / Crop Nutrition</div> <div>Basic Morphology & Physiology</div> <div>Genetics / Systems Thinking / Farming systems</div> <div>Basic Calculations / Biology</div>

	Agricultural Management Competency Profile
	Must be able to:
Competency	Make sound decisions based on economic and management principles to maximize profit
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Compile and analyse financial statements • Keep production records and compile farm budgets • Apply basic principles of risk management • Apply entrepreneurship principles • Apply human resource management principles • Understand the external policy environment and its impact on the business • Identify and analyse different marketing strategies and channels • Understand and optimise the factors (land, labour and capital) of production • Apply project management principles • Analyse farm business and apply sound business management practices • Develop and evaluate a customised, comprehensive business plan
	Module Topics
Basic Module Progression	<div>Risk in Agriculture</div> <div>Entrepreneurship</div> <div>Production Economics</div> <div>Budgeting</div> <div>Project Management</div> <div>Human Resource Management</div> <div>Marketing</div> <div>Farm Accounting & record keeping</div> <div>Basic Calculations</div>

	Soil Science Competency Profile
	Must be able to:
Competency	Optimally utilize the soil without degradation (sustainable use)
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Understand and analyse the natural resources (Soil, Veld, Water, Climate) • Understand and interpret soil survey • Undertake soil sampling and soil fertility management • Implement sustainable agricultural practices with regards to erosion and tillage practices • Understand the soil conservation act and manage soils accordingly • Understand basic properties of soil
	Module Topics
Basic Module Progression	Natural Resource Assessment Soil Survey (Classification) & mapping Soil Conservation and Management Soil Fertility Soil properties (texture, structure, moisture...)
	Basic Calculations / Chemistry / Physics

	Vegetation (Veld & Pastures) Competency Profile
	Must be able to:
Competency	Optimally manage veld and pasture in a sustainable manner to maximize profitability
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Know and understand natural resources • Understand and know how to manage different plants, veld types and grazing systems • Determine the grazing capacity and stocking rate <i>etc.</i> • Manage cultivated pasture • Understand and implement veld restoration / improvement • Understand and implement feed conservation and fodder flow planning • Understand regulations regarding rangeland and forage management
	Module Topics
Basic Module Progression	<div>Fodder flow planning (unknown environment)</div> <div>Fodder flow planning (known environment)</div> <div>Veld management</div> <div>(Veld restoration, burning, Grazing capacities, stocking rates <i>etc.</i>)</div> <div>Cultivated Pastures</div> <div>Rangeland Regulations</div> <div>Veld Types and Biomes</div> <div>Natural Resources Management (Veld, soils, water, climate...)</div> <div>Basic Calculations / Biology (ecology)</div>

	Engineering (Civil & Mechanical) Competency Profile		
	Must be able to:		
Competency	Optimally utilize equipment and infrastructure to maximize productivity		
	Specific Competencies		
Specific Competencies	<ul style="list-style-type: none"> Understand irrigation planning and installation Do irrigation scheduling and basic maintenance Do basic design of drainage systems 	<ul style="list-style-type: none"> Identify, select, calibrate, maintain and operate farm machinery & equipment Do basic workshop and on farm practices (welding, carpentry, farm electricity, plumbing...) 	<ul style="list-style-type: none"> Design and maintain simple animal housing, crop storage and facilities Design and maintain other farm structures (dams, roads, fencing...) Design, construct and maintain soil and water conservation structures (contours, waterways...) Do basic construction practices (concrete, bricklaying...)
	Module Topics		
Basic Module Progression	Drainage Irrigation Scheduling Design & installation	Maintenance & repairs Machinery & implement operations ID & selection	Crop & Animal Structures Roads Fencing Basic construction and maintenance
	Basic Calculations / Basic Physics		

	Innovation Capacity (Extension) Competency Profile
	Must be able to:
Competency	Operate effectively in a complex, dynamic development context
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> • Communicate effectively through a variety of means • Be innovative in socio-technical platforms • Identify, evaluate and adapt innovations to circumstances • Monitor, evaluate and analyse their own and external socio-technical variables • Function in a variety of groups and environments • Identify own role in rural development setup and play an active role (collaborative) in development initiatives
	Module Topics
Basic Module Progression	<div>Innovations and technological advances</div> <div>Development within the agricultural context</div> <div>Analytical Skills (soft skills)</div> <div>Group Dynamics (soft skills)</div> <div>Communication skills (soft skills)</div> <div>Language</div>

	Agro-Processing Competency Profile
	Must be able to:
Competency	Apply safety and quality standards in the handling, preservation, processing & packaging of crop and animal products
	Specific Competencies
Specific Competencies	<ul style="list-style-type: none"> Identifying opportunities for adding value Use appropriate handling, preservation and processing methods Apply regulations (safety, quality, health...) in preservation and processing of agricultural products Select appropriate packaging materials Store products according to requirements
	Module Topics
Basic Module Progression	Agro Processing (final year)



CBL Curriculum Matrix



- The basics of a CBL curriculum is there
- Can be individualized
- Each College can choose:
 - Which Learning Lines applicable to them
 - Build a combination of modules to fulfil requirements of a qualification
 - Combine / integrate modules from different learning lines





It was a pleasure to be involved in this COLA

THANK YOU

Juan, Bernd & Petronella

