

COMMERCIAL FORESTRY INVESTMENT CONFERENCE

23-26 NOVEMBER 2021

EDUCATION AND SKILLS DEVELOPMENT IN COMMERCIAL FORESTRY

**Prof. Balozzi K. Bekuta and Prof. James Ole
Kiyiapi**

Forestry and Wood Science Department
School of Natural Resource Management
University of Eldoret



Title: EDUCATION AND SKILLS DEVELOPMENT IN COMMERCIAL FORESTRY

PROF. BALOZI K. BEKUTA AND PROF. JAMES OLE KIYIAPI
Forestry and Wood Science Department, School of Natural Resource Management
University of Eldoret

PRESENTED AT THE KENYA COMMERCIAL FORESTRY
INVESTMENT CONFERENCE AND EXPO, KEFRI HDQs, 23rd - 26th
NOVEMBER 2021



INTRODUCTION AND DEFINITIONS

- **Forestry:** Science, practice, art & **business** of planting, nurturing, managing and using forest resources (goods and services) sustainably.
 - Be these trees in forests, woodlands or peoples' farms (e.g. FAO 1994, Temu *et al.* 2008).
- **Commercial forestry:** forestry anchored on tangible benefits and monetary gains.
- **Commercial forestry emphasises on the Business aspect of forestry.**
 - i.e. The work of making, buying or selling products or services for money (Macmillan English Dictionary 2007)
- **Traditional forestry:** management of exotic plantations for timber and fibre for pulp and paper Industries (Temu *et al.* 2008, CISL 2017).

- **Education:** the knowledge gained in School, College, University (Cambridge Advanced Learner's Dictionary 4th Edition. 2015)
- **Skill:** ability to do a job/activity well (due to practice); (Cambridge Advanced Learner's Dictionary 4th Edition. 2015)

- *“To be truly Educated is to appreciate the toil of other human beings and to do all that you can to make their lives better”*
(Annon)
- *“EDUCATION is not the learning of Facts, but TRAINING THE MIND TO THINK”* (Albert Einstein)

EDUCATION AND SKILLS DEVELOPMENT IN COMMERCIAL FORESTRY

- Forestry today, and in particular commercial forestry, must anchor itself on professional husbandry and holistic management of natural resources especially soil, water and biodiversity (CISL 2017).
- Today's forestry education needs to be dynamic and responsive to traditional needs (timber and fibre) but more importantly address emerging issues especially those related to social, economic, environmental, biodiversity and climate change (Temu *et al.* 2008, CISL 2017, Balozzi 2013).

- Professional Forestry in Kenya has a long history, from the time of growing trees for steam engines in the 1890s to current large scale planting managed for commercial purposes.
- Forestry education is in tandem; started with European model and slowly changed to embrace multiple use goals and local needs (FAO 1994, Kiyiapi 2005).
- **But the business aspect of forestry** has not advanced very much in Kenya with only a few companies venturing into commercial forestry and meaningfully investing in the sector.
- Forestry Education on the other hand has come of age with various qualified personnel working in the sector (Education, Research, Management and Industry), albeit with some performance challenges.

- Education should evolve with the people so as to respond to changes in societal needs.
- Education should be proactive, responding to forestry needs and expectations that are relevant to today's challenges in Kenya and the globe (Kiyiapi 2205, Temu *et al.* 2008, Balozzi 2013).
- In the just ended Climate Change Conference of Parties (COP26), one of the key outcomes was the need to reduce deforestation.
 - This is crucial in terms of strategic investments in forestry. It may impact on logging 'models' where 'traditional' clear felling will not be looked at in a friendly way.



“The Greatest TRAGEDY of SCIENCE is the slaying of a beautiful HYPOTHESIS by an UGLY Fact” (Albert Einstein)

**There are a lot of People and Organizations that get into
“Commercial forestry” without factual information, without
Educated and skilled personnel**

- In a self- and peer (re) evaluation exercise, the Department of Forestry and Wood Science of the University of Eldoret conducted a tracer survey of its current students, Alumni and Employees in Forest Organizations and Employers.
- The survey was aimed at getting feedback on curriculum review which was due.
- The results showed that there is demand for forestry professionals with skills in; **Forest Information System (GIS, RS, ICT..), Forest Products Trade and Marketing, Hydrology, Forests and Climate Change, Disaster Management and survival skills, Biodiversity and Conservation.**

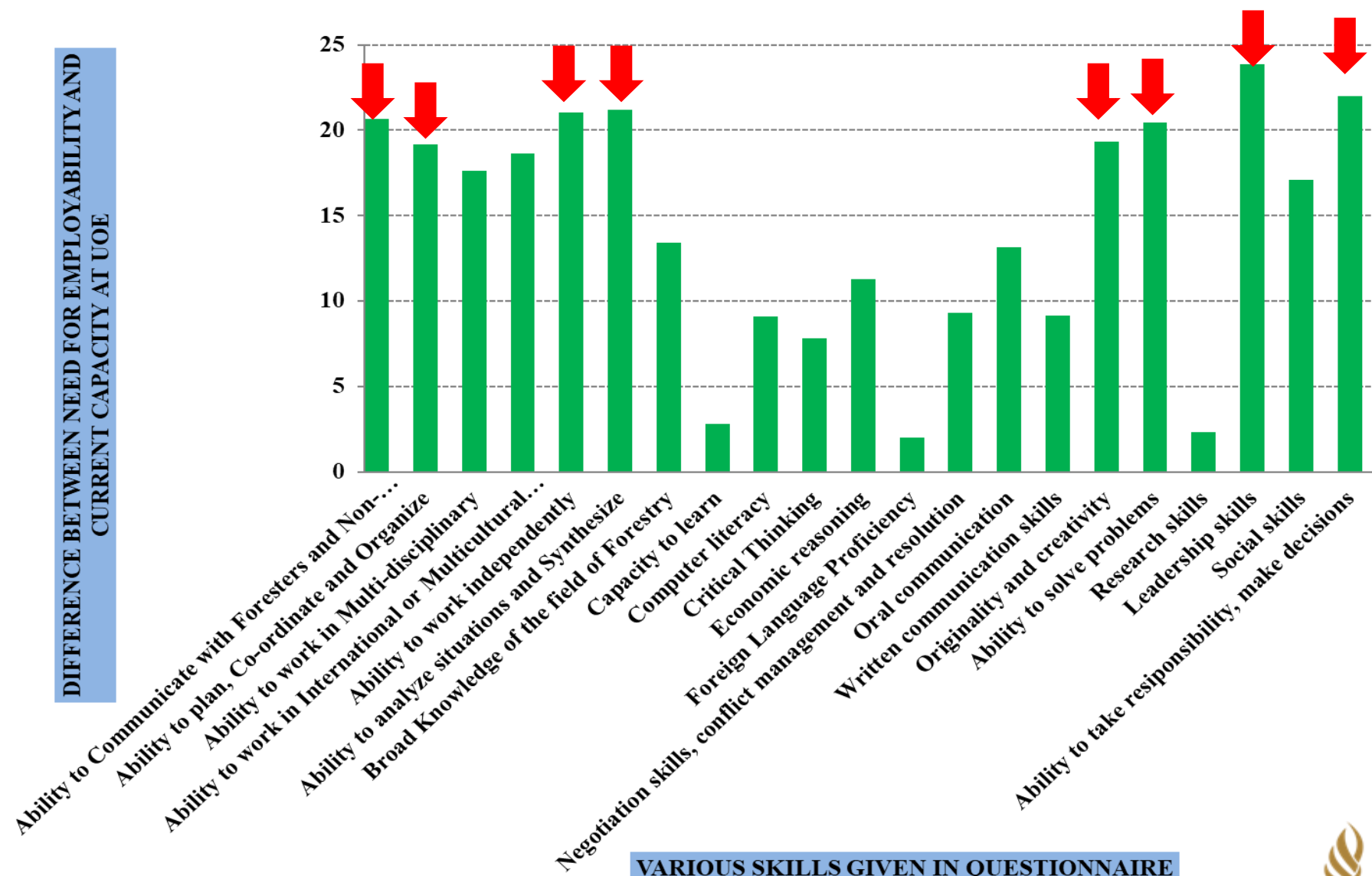
Skills are important to build confident professionals with talent and expertise to perform their tasks properly and professionally.

Education should impart the necessary skills in commercial forestry.

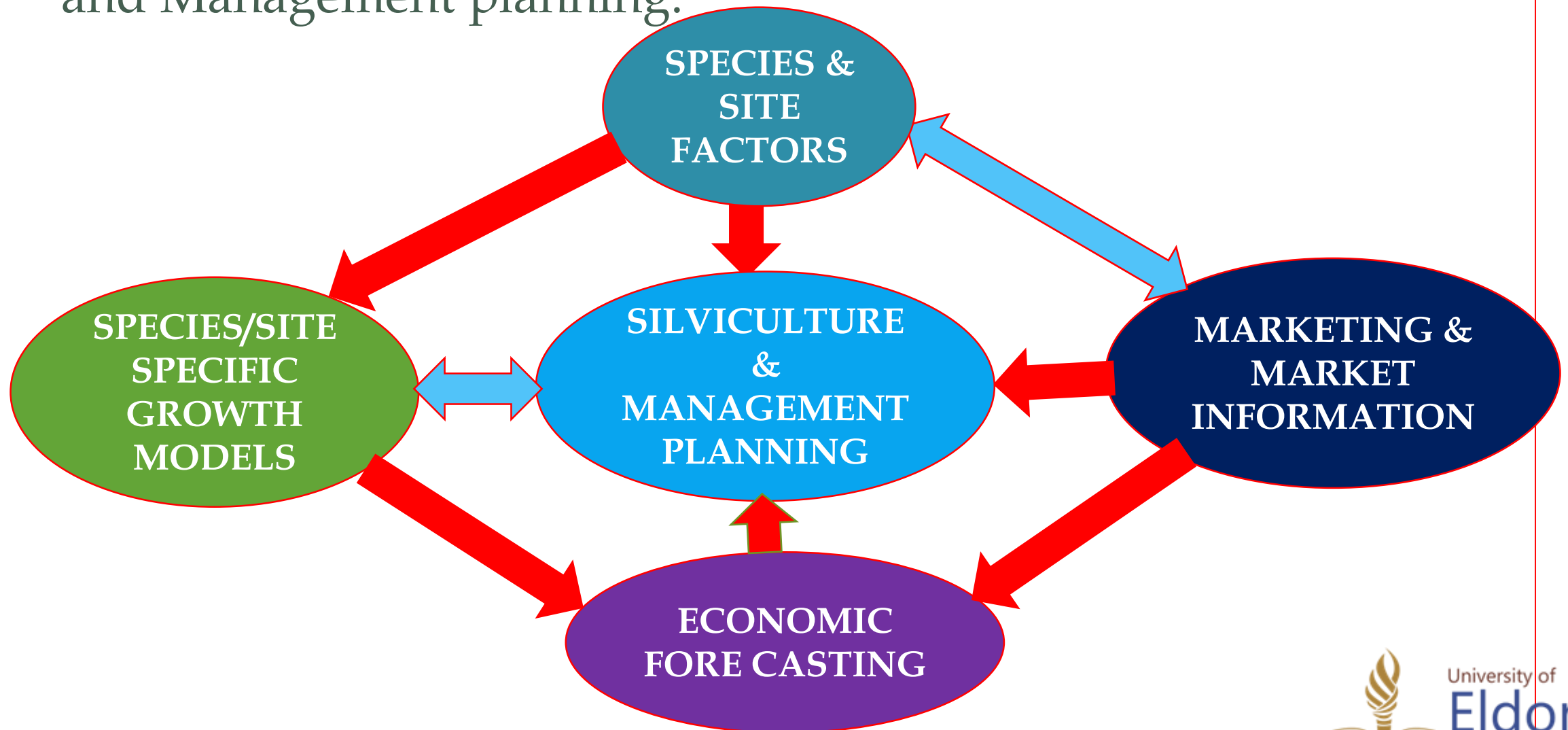
- Forest Management Planning
- Forest biometry
- Product modelling
- Forest Information System (GIS, RS, ICT..),
- Forest Products Trade and Marketing,
- Soils and Hydrology,
- Forests and Climate Change,
- Disaster Management,
- Biodiversity and Conservation,

- Communication,
- Planning and coordination,
- Ability to work independently,
- Analyze situations and synthesize,
- Originality and credibility,
- Ability to solve problems,
- Leadership and responsibility and
- Decision making.

SUBJECT IMPORTANCE IN THE JOB INDUSTRY



- Commercial forestry needs graduates with computational and imaginative skills borne of a thorough grounding in Silviculture and Management planning.



1. Poor Management will lead to reduced growth and yield; (blue line)
2. Good management will lead to better growth and yield (golden)

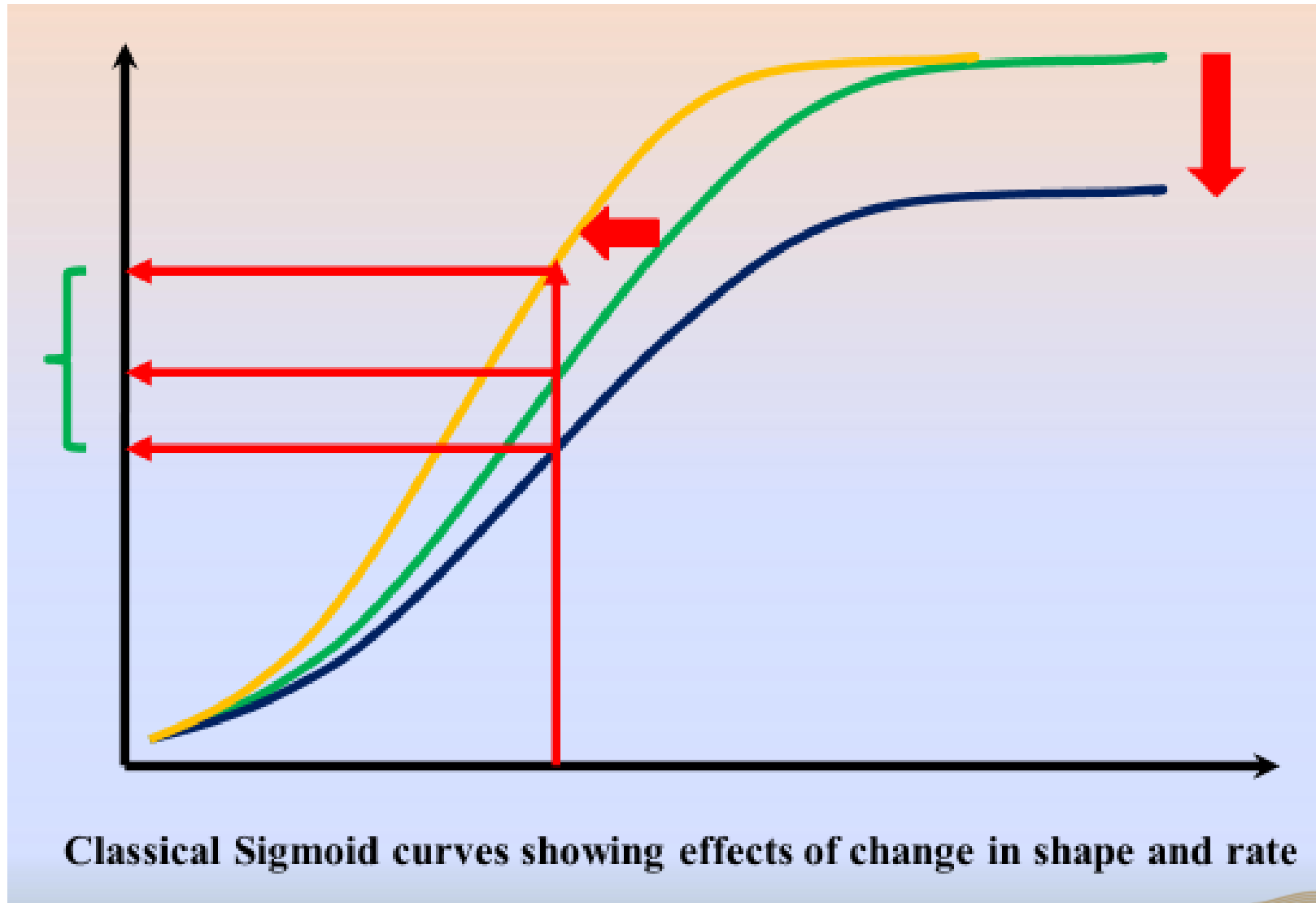
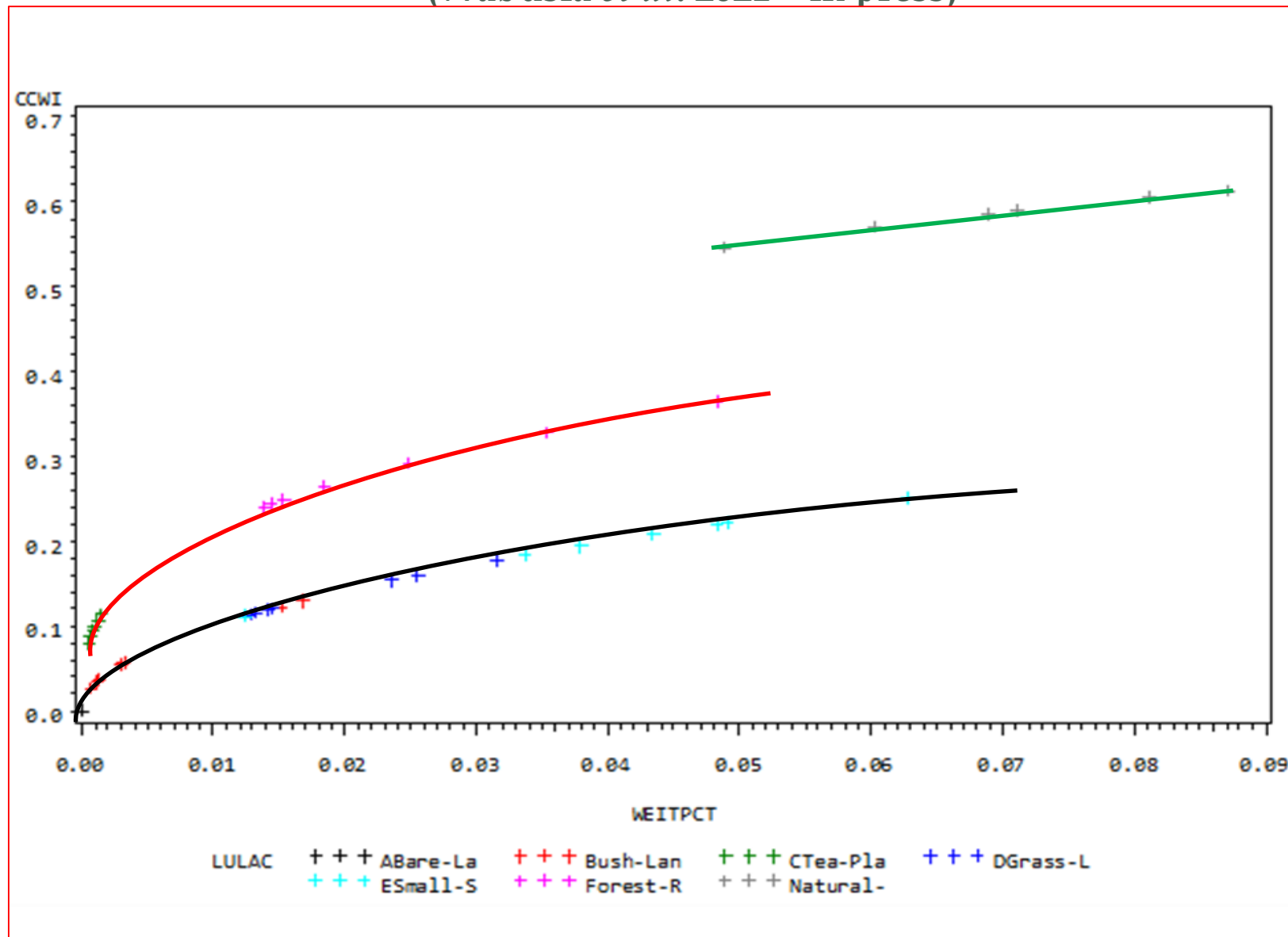


Figure 1: Climate change Wellbeing trajectories of different land uses
(Wabusia *et al.* 2021 – in press)

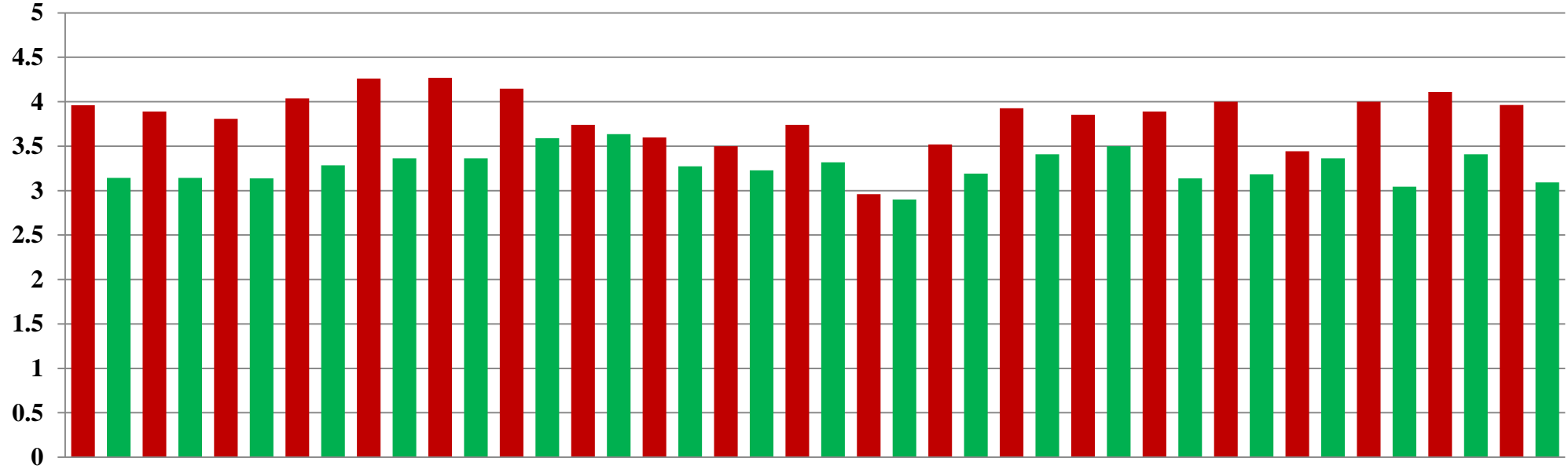


AN EXAMPLE OF AN ECONOMIC APPRAISAL OF A TREE FARMING VENTURE WITHOUT INTERMEDIATE INCOMES

No.	ACTIVITY	YEARS					Income after Sales	
		1	2	3	4	5		
1.	Land rent (per Ha)	20.000	20.000	20.000	20.000	20.000		
2.	Land preparation (per Ha)	10.000						
3.	Planting stock	41.250						
4.	Transportation	11.000						
5.	Pre-planting Site preparation and Planting (hole digging and planting)	13.750						
6.	Management (Weeding, Hygiene, Protection)	20.000	20.000	10.000	10.000	10.000		
7.	Professional services (4 Forester visits)	6.000	6.000	6.000	6.000	6.000		
8.	Total cost	122.000	46.000	36.000	36.000	36.000	276.000	
9.	Present value (r=14%)	234.901	77.692	53.336	46.786	41.040	1.125.000	10% loss
10.	Carbon off-sets from the woodlot / Gok & CoG Tree growing incentives	2.500	5.000	10.000	17.500	22.500		
11.	Compounded Carbon off-set incomes	4.814	8.445	14.815	22.743	25.650	76.467	
		<u>INCOME SUMMARY</u>						
	Total compounded cost	453.754						
	Total Income after sells	1.201.467						
	Difference	747.713	Per Ha					

EMPLOYABILITY (RED), COMPETENCY (GREEN) vs VARIOUS SKILLS GIVEN IN QUESTIONNAIRE

EMPLOYABILITY/COMPETENCY SCORE



Ability to Communicate with Foresters and Non-...
 Ability to plan, Co-ordinate and Organize
 Ability to work in Multi-disciplinary
 Ability to work in International or Multicultural...
 Ability to work independently
 Ability to analyze situations and Synthesize
 Broad Knowledge of the field of Forestry
 Capacity to learn
 Computer literacy
 Critical Thinking
 Economic reasoning
 Foreign Language Proficiency
 Negotiation skills, conflict management and resolution
 Oral communication
 Written communication skills
 Originality and creativity
 Ability to solve problems
 Research skills
 Leadership skills
 Social skills
 Ability to take responsibility, make decisions

VARIOUS SKILLS GIVEN IN QUESTIONNAIRE

Most Employers consider the following highly for Employability:

- **Technical skills / knowledge in Forestry**
- **Ability to work Independently**
- **Leadership skills**
- **Ability to work in International Organizations**
- **Responsible and decision maker**

Conclusion

- There is an urgent need to bridge the gap between theory and practice in forestry education to ensure relevant skills development for commercial forestry.
- In the face of little or no funding from the central Government, the Industry may need to come in strongly and add value in the training of its professionals to ensure that necessary practical skills are adequately imparted.
- Proper skills development is key to the success of Commercial forestry

THANK YOU

