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Institute of tropics and sub-tropics
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Bachelor work

**Analysis of agricultural practical education
in Angola**

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Declaration

I, **José Pina Paulino**, do hereby solemnly declare that the bachelor work entitled "Analysis of Agricultural Practical Education in Angola" and results reported within this work were executed by me under the guidance and supervision of Ing. Jana Mazancová, Ph.D. of the Institute of Tropics and Sub-tropics. Further i declere that this work has not been submitted to any other university and/or research institution for consideration and/or award of a degree and/or academic qualification.

Signed this.....day ofin the year 2010

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Abstract

In Angola, agricultural education at two secondary schools of agriculture (in Huíla Province and Uíge) left from the colonial era during long time was supplied in the base of theory. In 2006 started the revolution of agricultural education guided by the new educational reform approved in 2001. The new project brought the modernization of the Angolan educational system, particularly for TVET sub-system, such as new schools and new infrastructures, materials and equipments to achieve the goals of the new educational program (new teaching program, content, syllabi) that provide better condition for student and teachers specially in the level of practical education them before its implementation. The new project of Ministry of Education is more for providing to young people relevant knowledge and skills for job-competence attuned to the actual demand of the labour market and to the environmental and technological changes. But the local condition has been hurdle for the proper development of practical education.

Abstrakt

V Angole bylo zemědělské vzdělání na dvou středních zemědělských školách, které zůstaly z koloniální éry (v provinciích Huíla a Uíge), po dlouhou dobu postaveno pouze na teoretickém základu. V roce 2006 začala revoluce v zemědělském vzdělávání řízená novou vzdělávací reformou schválenou v roce 2001. Nový projekt přinesl modernizaci angolského vzdělávacího systému, zejména pro sub-systém odborného vzdělávání, jako jsou nové školy a nové infrastruktury, materiály a zařízení sloužící k dosažení cílů nového vzdělávacího programu (nový výukový program, obsah, učební osnovy), který poskytuje lepší podmínky pro studenty a učitele zvláště na úrovni praktického vyučování, než jaké byly před jeho zavedením. Nový projekt Ministerstva školství je zaměřen na poskytování důležitých znalostí a dovedností mladým lidem, aby dosáhli pracovních kompetencí odpovídajících skutečné poptávce na trhu práce a oblasti změn životního prostředí a technologických změn. Místní stav byl ale překážkou pro správný vývoj praktické výuky.

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1. Introduction

The level of people educated and supplied with relevant work skills within the Angolan country is to concern, is really low and represents a limiting factor in all productive sector mainly of agricultural output where many people are looking for food, but few of them can find it in necessary or recommended proportion - the demand for food is higher than the supply. This handicap also contributes to the lack of innovative perspective – introduction of new technology, techniques and methodology necessary to improve the production by good practice in general point of view.

Angola by the consequence of war is poor in skilled labour force, dramatically founded at agriculture sector, where about 75% of the population find livelihood. During 27 years of civil war (1975-2002) the country was strongly destroyed, and the damages affected directly the ES (Educational System) – the war destroyed infrastructure, teaching facilities, and interrupted the education and training of the majority of the population within the country during the war, namely at rural area. And it reduced drastically the number of skilled technicians, some of them died during the war and others left the country aboard (especially Portuguese technicians) (Zau *in* Angop, 2011). The current constraints (major part of the population facing extreme poverty, low income, hunger, food insecurity, mal nutrition, health problems, etc.) within the country is mostly the result or consequence of the long time of civil war caused by political non-agreement between the two parties – UNITA and MPLA . According to the Angolan ME the conflicts have affected strongly educational system almost it had collapsed; in the places where teachings were somehow possible pupils were educated only in theoretical range and as consequence relatively the number of vocationally trained or skilled population for economically active had fallen. However, AET were affected principally by the following hindrances (MEA, 2007):

- courses were mainly theoretical
- facilities for practical training were insufficient, or non-existent
- Low qualification of teachers
- only two courses were offered - Agriculture and Animal Husbandry
- courses were not precisely defined, their content was too wide

- one week contained 38 teaching units; that was too demanding for pupils (actually 32 teaching units)
- extremely long period of preparation and examination
- overcapacity of students in classrooms (sometime double the capacity of the classroom for 45 maximum)
- Geographically most schools were situated near the coast, in central and southern parts of the country. In the East, Northeast and Southeast parts of the country were completely without agricultural schools

These obstacles did continue until the implementation of the new educational project (educational reform) for TVET so-called RETEP (see list of abbreviations) in 2001. Before the RETEP the TVET faced problems mainly in range of practical education, few students could complete their studies (often only 30%). State costs per graduate were therefore extremely high (MEA, 2007).

2. Literature review

Far from the wars, the country starts to identify fast economic growth from post-civil war period as a premium of the peace. Estimates from 2011, point that Angola has about 19 millions inhabitant (18,6 million people in 2009) with GNI per capita of 3,940 USD (3,880 USD in 2009). The annual GDP growth was of about 22.7% in 2007 and it declined about 20.4% to 2.3 % in 2011 (World Bank, 2012). This growth is largely dependent on the amount of precious mines exploited (petroleum, diamonds) and its value in the world market. Therefore, the local human the human development index (HDI) still is not satisfactory. For example, between 2002 and 2011 Angola's population HDI value increased slightly from 0.384 to 0.486, yet about 77 % of the population is living with less than 1.25 USD per day and the population adult (from 15 age and above) literacy rate is about 70% (HDR, 2011).

So, majority of the population lacking for some education and training are the rural people, small hold farmers. They use traditional principle to grow food and struggle the hunger. They are farmers without success in their mostly self-employer job (agriculture), they sacrifice time and health making hard work on their field for so low

production, revenue, low income or prejudice. They have this hard style of life because they are not able to find a better job or way to increase and improve their agricultural production, because they miss education and training to develop their personal and professional skills. Next to these people is remarkable the great role and importance of the AET (Agricultural Education and Training). For rural farmer learning about correct, efficient and effective way to do agriculture is a matter of life, because they find it as a cure to improving their productivity and take better benefits from it in order to reduce the hunger, combat the poverty and/or its derivatives, malnutrition, increase the hold-house income etc. Therefore, it has a large function and actively participation in the rural socio-economic development and its sustainability. Otherwise, low education and skills development of the population in active life is seen as hindrance or limiting factor of development perspective in many developing countries.

The Angolan agricultural sector need for rehabilitation, revitalization and adopt new innovative methods, techniques and technology of production to supply enough food to its population and contribute significantly in hunger and poverty eradication and improve the living condition of the local population. But it relies to the empowering of the government to invest on AET of the population which want to develop it.

2.1. Agricultural education and training in Sub-Saharan Africa

The African continent has been strongly affected by the economic crisis, political unstable, conflicts, mal-governance and the lack of structural and administrative reforms associated with the low educational qualification and job incompetence of the active population. All of this has contributed to the persistence of the low productivity, hunger and poverty of the majority of the population dependent on land cultivation – small hold farmer families.

Evidently the development of African countries is mostly dependent on the agriculture developed among the rural community (where most population traditionally rely in agricultural activities of low income). This development can be

sustainably achieved if investments to education and skills building opportunities rural young and incentives to encourage the small hold farmer's families to become more productive are addressed.

Different colonial regimes left behind different educational approaches, especially with respect to agricultural education and research. The whole world has been touched by significant changes such as by economic liberalisation and the globalisation of trade, demographic pressures such as population growth and HIV/AIDS, ecological changes related to climate change and urbanisation, and new technological opportunities in information, communications and biotechnology. But These colonial educational approaches did not change significantly In much sub-Saharan Africa with the coming of independence (Spielman *et al.*, 2008). AET remain weak to supply up-to-dated knowledge and skills of production attuned to the global changes to meet the present and future problems among the African society.

2.1.1. Forms of agricultural education and training in Sub-Saharan Africa

Educational systems (ES) in almost all African countries include both: general education which enables pupils who gain access to them to continue in their schooling to higher levels, and vocational education for those who opt to focus on immediate employment or those who, due to limited access to educational opportunities, are crowded out of the general education ladder. Some countries have 'pathways' to give the latter group access to higher education (Oketch, 2006).

Generally, in SSA agricultural education and training is supplied in three different tracks of human knowledge and skills building, such as formal, informal and non-formal education, and all of them have are inessential for TV work skills development of one self. Lindley *et al.* (1996) defend that formal agricultural education is needed for output of skilled manpower to serve the agricultural sector through extension, research, entrepreneurship and commerce and that non-formal agricultural education is supplied public and private extension services and is needed for training of farmers, farm families and workers and for capacity-building in a wide range of rural organizations and groups. Despite to this, to complement these basic ideas about

AET, Oketch (2006) cited that “*Non-formal learning results from organised activities within or outside the workplace which involve significant learning which is not accredited and ‘Informal learning’ occurs ‘unintentionally’ or as a by-product of other activities (OECD, 2003 in Green et al., 2004)*” and to conclude it he said that “*Most of the TVET on which there is data is ‘formal learning’—that is to say ‘organised’ and ‘intentional’ learning whose outcomes are accredited. However, TVET, in principle, also encompasses ‘non-formal learning’ and ‘informal learning’ occurring mostly through apprenticeship and organised within family lines but these are difficult to capture in national databases*” and kept saying that “*Much of what is often referred to as work experience, and particularly on-the-job training (OJT), is either non-formal or informal in character and constitutes also a large part of the vocational learning that occurs in most societies*”. Meanwhile, according to publishing of FAO and UNESCO (2002) AET takes place at many different levels, from multi-grade primary schools to agricultural universities.

According to FAO (1997), the term Agricultural Education and Training (AET) refers to institutions and courses of agricultural instruction at all levels and duration, from full-time degrees to short-term and continuing education. So, this educational system yet includes the following qualifications:

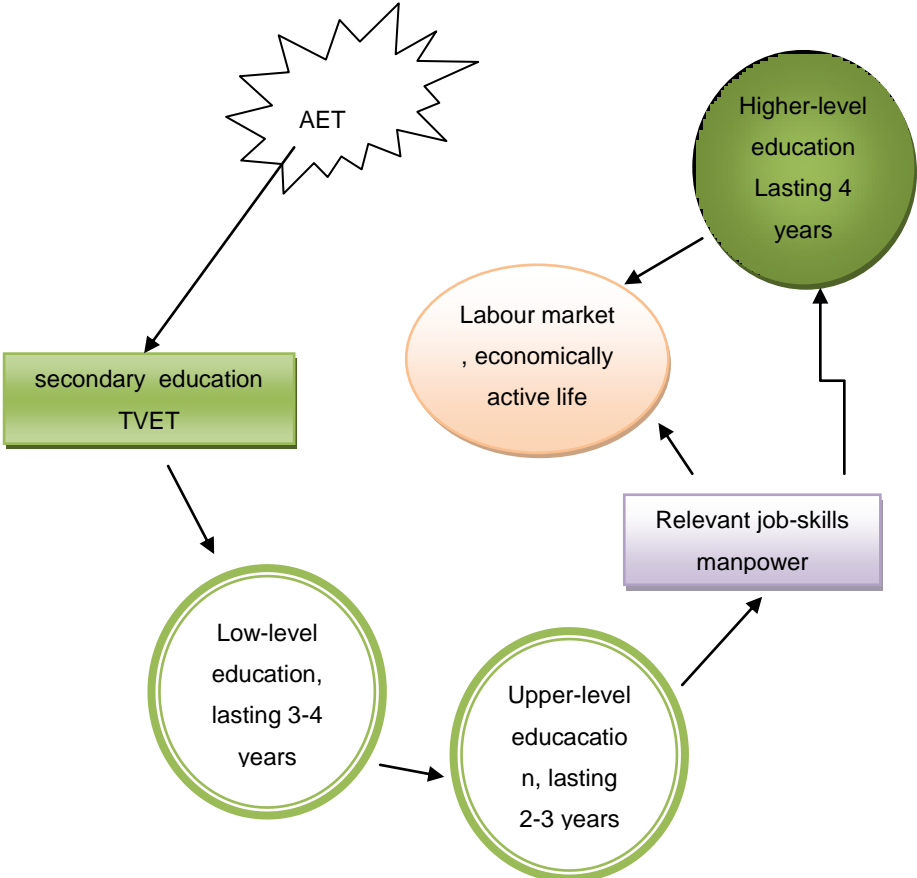
- ✓ Technical Vocational Education and Training (TVET) refers to secondary-level institutions, colleges and technical high schools below degree level (e.g. diploma).
- ✓ Higher-level Education and Training refers to university (degree) level programs of study.
- ✓ Continuing Education refers to any system of education conducted through on-the-job training and/or short courses.

Most of Africa's field-level agricultural extension workers are prepared at the intermediate level (TVET), because in such level students can acquire competency-based education such as skills, knowledge and attitudes that are being demanded by governments and private employers (Lindley *et al.*, 1996), and this human qualities are desirable at the labour market seen that improve productivity and quality of output of a productive sector or system, in this point of view many organizations support secondary TV schools of agriculture. However, Spielman *et al.* (2008) particularized

the “post-secondary AET systems” in sub-Saharan Africa. According to Spielman, these systems are commonly structured at least by four different components such as: universities, colleges, technical/vocational schools, and non-formal educational organisations and activities, and these components particularly plays a role in fostering agricultural innovation, a role that relies on the strengths of the specific countries and elements of the agricultural economy that it serves. But, In any case, secondary and post-secondary AET walk hand in hand to respond the demand of the labour market for up-to-dated job skilled techniques or professionals who can respond the dynamism of global changes and demand for agricultural products.

Therefore, formally and in generally, in SSA AET start in secondarily levels (Low- and upper-level) of education in with pupils gain skills and a ready engage the economical active life or possibly (for some African country) continue in higher education as is demonstrated in the following schema (fig. 1) of AET trajectory in SSA adapted from Oketch (2006):

Fig.1: Schema of AET trajectory in SSA adapted from Oketch (2006)



Source: Oketch, 2006

Oketch (2006) concentrated his work in seven African countries (.Botswana, Egypt, Senegal, Zimbabwe, Ghana, Seychelles, Tanzania) and find out that the support placed on TVET at each of these levels varies from country to country with the importance which each of them assigns to TVET , and that In African TVET is a system distinguished from general education system mostly on the proportion of academic content in the courses offered and the level of specificity in the vocational courses on offer. TVET is a complex system with own institutions, teachers, programmes, and curriculum.

2.1.2. Importance of AET in Sub-Saharan Africa

High proportions of the African population still live in the rural areas, and many of these are among the truly poor. Many are reliant on some form of primary production for their livelihoods, while others live by servicing these producers in many different ways, such as marketing, the provision of micro-credit, small-scale food-processing and craft-based enterprises, and so on. Many of these people also have to supplement their incomes through small-scale farming or other forms of land-based activity (Wallace, 2006).

Education and training are essential components of any strategy to improve agricultural and non-farm productivity and rural incomes. Learning about improved production technologies and methods, new products and markets, business skills, as well as life skills (such as health management, decision-making, self confidence, or conflict management) can make a big difference for many of the rural poor (FAO, 2010).

Human education and skills capacity is essential for improving the productivity, sustainability and food security of the many millions of small-scale rural households in sub-Saharan Africa (SSA). The enhancement of human capital is in large part dependent upon agricultural/rural education and training (RET) (Wallace, 2006).

Farmers' education can improve their rural productivity, and according to the estimate of FAO agricultural productivity is 7.4% higher on average for a farmer with four years of elementary education, compared to a farmer without any education, and evidence suggests that better education enables rural workers to find high-paying

non-farm employment, whereas a lack of education tends to limit their choices to agricultural and low-wage non-farm employment (FAO, 2010). *“In many countries social change and economic development have been organized by providing not only basic education (which is acknowledged as a priority), but also specific training to improve techniques employed in the rural economy”*(FAO, UNESCO. 2002).

Agricultural vocational education and training (AVET) has been seen important to be implemented in developing country to provide the necessary knowledge and skills which can aid significantly the farmers to improvement the productivity and quality of agricultural production, thus they can increase their income, reduce the poverty and its derivatives and contribute significantly for the country in range of socio-economic development. According Psacharopoulos (1997, in Oketch, 2006) traditionally in the level of TVET, AET can play the following :

- (i) vocational education and training can be a cure to youth unemployment. By providing the youth with pre-employment vocational education and training, governments will not only give them the skills that would be necessary later in the labour market, but also take the youth off the streets;
- (ii) instilling technological knowledge based on what happened during British industrial revolution, followed up by Germany and Japan is a common belief that economic progress heavily depends on technological knowhow. It therefore logically follows that the next step is to expand vocational and technical education;
- (iii) vocational education and training are seen to offer hope to academically less able students who are not able to advance through the school system;
- (iv) as everyone cannot be trained for top level jobs, vocational education and training would provide the much needed middle level technicians;
- (v) in its role in equipping the youths with skills needed in the labour market, vocational education and training would reduce unemployment leading to incomes and reduced poverty;
- (vi) economic globalisation has not only raised the premium on skills but has also reinvigorated a need for a fresh look at the nature of vocational education and training.

“It must be acknowledged that, while a revitalised RET is an important key to improving productivity and sustainability in rural areas of SSA, it is only one of the

critical factors that must be present if food security and sustainable livelihoods are to be achieved on a wide scale in SSA, and has to be accompanied by other supportive conditions at the macro-economic level. These include favourable terms of trade; access by poor households to land and other elements of the natural resource base, with improved security of use and tenure; provision of basic infrastructure; freedom from civil strife and improved levels of justice, equity and inclusion for all groups of rural dwellers. The revitalisation of RET is achievable, but must form part of a wider environment of changes which, when taken together, will create the conditions for rural households throughout SSA to experience rising and sustainable levels of wealth and well-being” (Wallace, 2006).

Faculties of agriculture and agricultural colleges and universities were first formed in the belief that farm production could be increased as a result of the systematic application of current technology and agricultural research findings (FAO, 1997).

Postsecondary agricultural education and training (AET) in sub-Saharan Africa can contribute to agricultural development by strengthening the capacity to innovate - the ability to introduce new products and processes that are socially or economically relevant to smallholder farmers and other actors in the agricultural sector (Spielman *et al.*, 2008). The mission of these early educational institutions was to scientifically study agriculture with the participation of the farming community; to carry the results to a broad range of farmers who could use them; and to train farmers, extension workers, agricultural teachers and researchers so that agricultural production could continue to be increased on a sustained basis (FAO, 1997).

2.1.3. Current situation of AET

Institutes of agricultural education and research have been supported to improve agricultural production in SSA as a result of the systematic application of current technology and agricultural research findings. The mission of these educational institutions is to scientifically study agriculture with the participation of the farming community; to carry the results to a broad range of farmers who could use them; and to train farmers, extension workers, agricultural teachers and researchers so that agricultural production could continue to be increased on a sustained basis

(FAO, 1997). Postsecondary agricultural education and training (AET) as contributed to agricultural development by strengthening the capacity to innovate - the ability to introduce new products and processes that are socially or economically relevant to smallholder farmers and other actors in the agricultural sector (Spielman *et al.*, 2008).

The weaknesses in agriculture sector have begun to be recognised and addressed by the donor agencies, national governments and various types of AET providers, including the NGOs. *“It must be acknowledged that, while a revitalised AET is an important key to improving productivity and sustainability in rural areas of SSA... The revitalisation of AET is achievable, but must form part of a wider environment of changes”* (Wallace, 2006).

There is evidence of some recent innovations, both in the public sector and through the work of non-governmental organisations (NGOs), civil society organisations (CSOs) and other private bodies. These are most necessary if the endemic causes of rural poverty (poor nutrition, lack of sustainable livelihoods, etc.) are to be overcome. These provide hope of a new sense of direction that could lead towards meaningful ‘revitalisation’ of the sector (Wallace, 2006).

There is some evidence of continuous vocational training (CVT) undertaken by adults whilst in work but these are for specialised Government Ministries or Departments. In short, there is lack of massive evidence of any schemes aimed at ‘re-skilling’ and ‘up-skilling’ demanded by the so-called knowledge-driven economic set-up prompted by recent wave of globalisation (Oketch, 2006).

2.1.4. Principle Challenges for AET

Virtually all countries and donors agree on the importance of reducing poverty and its attendant problems of inequity, lack of respect for basic human rights, ill health, lack of knowledge and skills and marginalization of large numbers of people. It is often forgotten that the problem of poverty is first of all a problem of rural poverty and food security. In many poor countries, rural areas have seen little or no economic development and population pressure now constitutes a threat to agricultural resources and the natural environment (FAO, UNESCO, 2002).

The whole African continent is facing severe problems such as poverty, hungry, mal nutrition, food insecurity. The low level of educated and trained people remain as a limiting factor to improving those problems and enhance the living condition of the regional population and its continental development in general.

Over the years, the world has changed - environmental degradation, rapid changes in scientific and technical knowledge, the changing role of women in society and the increasing marginalization of agriculture and rural life all call for changes in agricultural education, and in many of the developing countries, agricultural education and training have failed to adapt and respond to the realities of rural societies (FAO, 1997).

Progress towards a better educated and consequently more productive rural sector, was greatly hampered by the lack of clear policies for RET (Rural Education and Training), as well as poor co-ordination among the various donor agencies in almost all the (African) countries studied (Wallace, 2006). It was also engendered by the progressive failure of most of the governments to provide adequate funding for maintenance of institutions and services and to adequate career development to retain and upgrade appropriately skilled and motivated personnel (Wallace, 2006).

many poor countries, rural areas have seen little or no economic development and population pressure now constitutes a threat to agricultural resources and the natural environment (FAO, UNESCO, 2002). Moving beyond this quantitative perspective, a qualitative analysis of education in the light of development also shows a reverse image. Due to an increase of pupils many schools in Sub-Saharan Africa have to cope with large class sizes and a lack of trained teachers and learning materials, affecting the quality of education in formal schools (Lewin, 2009; Zuze and Leibbrandt, 2011 in Blaak *et al.*, 2012).

Wallace and Green (2002) concluded that the lack of a clear 'systems' concept of AET urgently needed to be addressed, and that mechanisms were required to enable the sector to become sensitive to the emerging challenges and opportunities facing rural households throughout SSA. These included (FAO, UNESCO, 2002):

- the effects of privatisation and market liberalisation;
- the enhanced role of civil society in decentralised governance;
- the increasingly critical impact of HIV/AIDs on rural households.

According to Wallace (2006) The AET sector has remained largely unresponsive and beset by a range of constraints, and calls for change and “revitalisation”, he highlighted the major problems facing AET throughout the SSA region in the mid-1990s (see annex No. 1) and gives the following other steps necessary for revitalisation of AET, such as:

- the lessening of barriers of academic elitism and specialisation;
- enhancing interactions between different service providers;
- creating synergy through mutual learning between educational institutions, local community organisations and rural households.

Agricultural Education and Training (RET) or Agricultural Education and Training (AET) systems in sub-Saharan Africa have assessed their ability to provide for the learning needs essential for more knowledgeable and productive small-scale rural households (FAO, 1997).

By the late 1970s, disillusionment had set in, with the realisation that very long-term processes would be needed before the desired results could be achieved (Wallace, 2006). Reforms to address these constraints have been largely structural in nature by investments in new infrastructure, administrative decentralization, or the introduction of cost-recovery mechanisms - and undertaken either in response to government demands for larger numbers of trained professionals, or driven by the availability of short-term and often volatile donor funding (Spielman *et al.*, 2008).

Work on social capital shows that knowledge (and skills – author) constitutes a key element(s) for strengthening rural communities and facilitating their adaptation to change. And the big challenge of the new century is (education for all - author) to eradicate the poverty (FAO, UNESCO, 2002).

Lindley *et al.* (1996) said: *“It is a time for private and public partnerships that lead to curriculum revision and improved practical skills of graduates”* and that *“the goal should be to produce students who can find jobs, because they are well-trained and want to work in agriculture”*.

2.2. Agricultural education and training in Angola

From long time the Ministry of Education in Angolan (MEA) is preoccupied to solve the concerns fact of the low level of educated and skilled to develop or support Angola where is needed, to produce enough goods (food and other goods) for the own population, but the civil war was big hindrance to reform the old educational system (ES), particular TVET systems was the most affect because practical education could not be carried out in such condition and lacked means to be conducted. In 1978 (3 years after Angola get independence - 1975) was done changes in ES which was regarded unsuccessful after a being well analysed in 1986, because the war limited it progress (Zau, 2011). So, Angolan ME for long time not do work for practical education development of TVET system.

Therefore, in the last breaths of the civil war, was approved the new ER by the Council of Ministers in September 2001 and started to be implemented in 2003 (MEA, 2010). This ER came with two different projects to be implemented such as for general education and for TVET institutes.

Government implemented a new educational project for TVET (RETEP) which reached agrarian institutes of secondary education in 2006. The goals of the Angolan government with the implementation of the RETEP project is to provide better teaching condition, better education and training of students and skills capacitating of teachers to increase the output of specialized techniques qualified to attend the demand for skills in the labour market within the country within a country (Angola) beset by the war for long time (about 27 year of civil war), thus giving opportunities of a TVET for young people to provide them desirable job skills reduce the unemployment, enhance the productivity of agricultural and non-agricultural sector, and naturally to contributing in the reduction of the hunger and poverty.

2.2.1. *Brief history of AET in Angola*

In Angola, the history of AET started with arising of the first agricultural school in 1920, in Luanda. This history can be simplified in numeric proportion of 6:4:2 from the form of events in a period of 55 years (1920 to 1975). The proportion means that six schools were created, four were excluded and only two survived after independence. Such historic proportion was kept until the year 2008 (when the foundation of news agrarian schools started in order to support the new project of Educational Reform (ER) called RETEP (Reforma do Ensino TEchnico Profissional). According to the Ministry of Education in Angola (MEA), the first Agricultural school ‘‘Escola-oficina Agrária’’, was formed in the capital of Luanda, on November 1st of 1920. The establishment of this school started a long journey of challenges to the agrarian sector in general, especially as regards the formation of its staff or human resource trained to solve problems of agrarian character by Vocational Education (VE). And the MEA tests that until the independence of Angola from Portugal (1975) and until now a lot of changes the Agrarian Educational system has suffered. Before independence in the country was six schools and after independence in the country were only two schools, which were geographically situated in the South and other in the North (MEA, 2007):

- ✓ **In the South** - the Agricultural School (AS) of Tchivinguiro in Huíla Province (Escola Agro-pecuária da Província da Huila-Tchivinguiro). Founded on 8 December 1938.
- ✓ **In the North** – Agricultural school of Cangalo in Uíge Province (Escola Agrária de Cangalo – Uíge)

Chronological tables of AET events in Angola

Tab 1: Events of AET in Angola before independence (1975)

Data	Events	Courses offered
01/11/1920	Foundation of the first Agricultural school "Escola-oficina Agrária" in Luanda	
28/03/1927	Creation of the expermental Centre of Cotton of Catete Province	After changed to a Agriculture School of Agro-livestock technics
09/01/1937	Foundation of Agro-livestock schools of Catete, Cazengo, Malanje, Bié and Huambo Provinces	3 years course: <u>1. year</u> - Rudiments of Botany, <u>2. year</u> - Practical Notions of General Agriculture, <u>3. year</u> - Rudiments of Arboriculture, Horticulture and Pasture
08/12/1938	Foundation of Agro-livestock school of Huíla (Tchivinguiro) "Dr. Francisco Vieira Machado"	2 course lasting 3 years of aplication: Training of practical agro-livestock and foremen

Source: MEA, 2007

Tab 2: Events of AET in Angola after independence (1975)

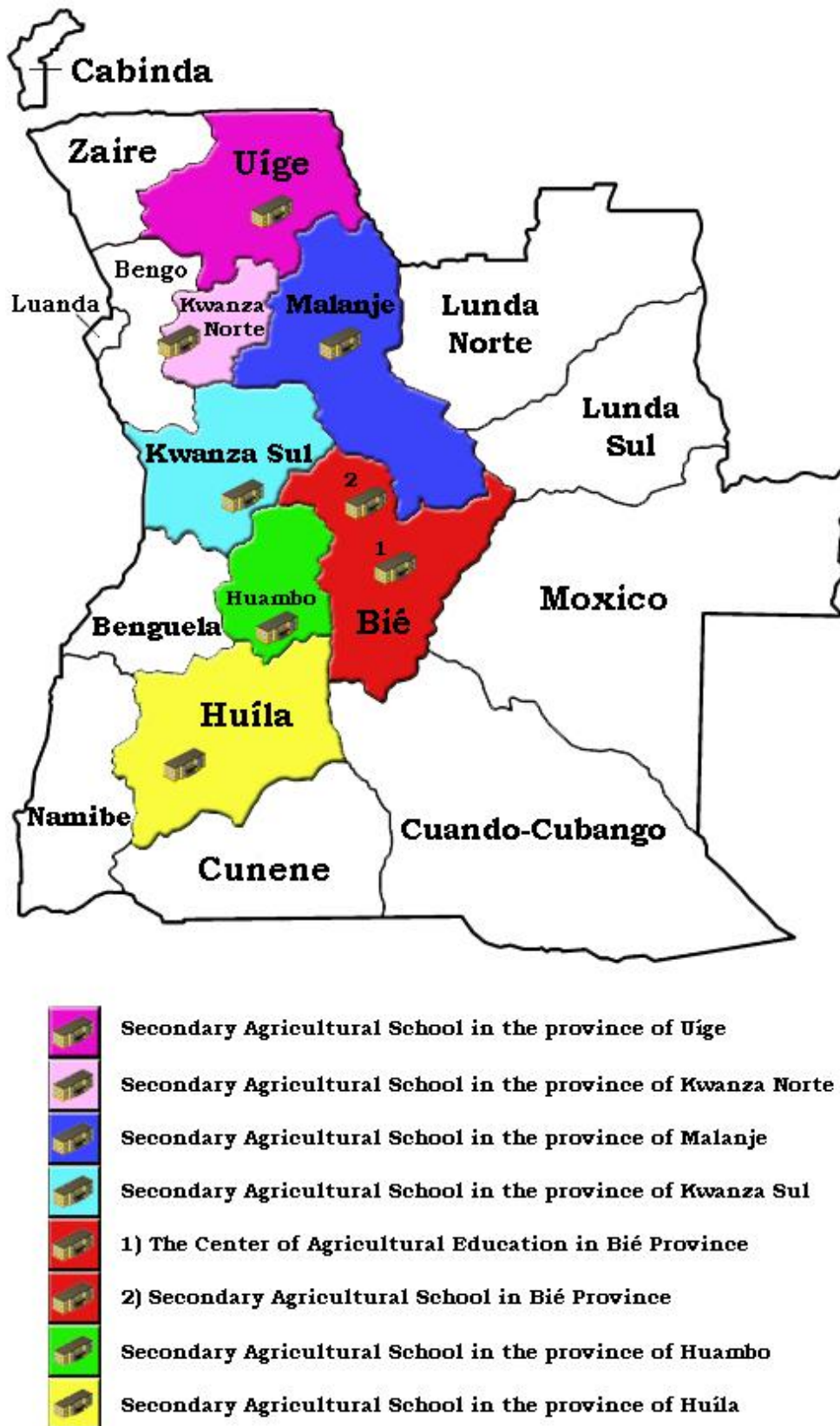
Years	Events	Courses offered
After 1975	Foundation of Agricultural school of Cangalo-Uíge Province and exclusion of 4 agro-livestock schools	Only 2 Agro-livestock schools (from Huíla -Tchivinguiro and Uíge - Negage) were working in the coutry
2004	Foundation of CAEB centre, from the Bilateral Development Project of the Czech Official Development Cooperation with the Government of Bié Province from 2003 – 2009	4 years course of general agriculture for extension work
2006	Implementation of the RETEP project (new educational reform from 2001) by the ME at the agricultural school of Tchivinguiro-Huíla	3 courses (lasting 3 years): Animal production (Livestock), Vegetal Production (Plants) and Agricultural Management
2008	Foundation and implementation of the RETEP project at agricultural Secondary school of Malanje, Kwanza Norte e Sul, Huambo and Andulo-Bié	
2009	Foundation and implementation of the new projec of RETEP at agricultural Secondary School of Negage - Uíge	

Source: MEA, 2007

2.2.2. Current situation of AET in Angola

Currently Angola officially works with seven secondary institutes/schools of agriculture, built in by the China cooperation and found between the years 2007-2009. They almost have the same architecture, except the holder Secondary Agriculture School of Tchivinguiro, Huila Province. And they are situated or distributed in seven (7) provinces within the Angolan Territory, it is in province of Uíge, Malanje, Kwanza Norte e Kwanza Sul, Huambo, Bié and Híla province as can be seen in the following map:

Fig.2: Map of secondary agricultural school localization



Source, Online available: <http://mapsof.net/map/angola-provinces-blank>

The agrarian school complexes include boarding house for teacher and students and with the right of 3 meals per day. According to management of the schools the demand for the vocational course tends to increase each academic year. Students are admitted without entrance exams, the conditions are: have less than 18 years old and fulfil successfully the six years of basic school (primary education). The enrolment depend mostly on the capacity of the classroom (36 maximum)

Syllabus/curriculum – its division and objectives

Each course is compound curricular by 25% of Theory lessons, 25% of science lessons related with the optional course and practical lessons occupy 50% of all lessons of the course (MEA, 2007).

The goals of the project RETEP can be *classified* from two different perspectives – pedagogical and general (MEA, 2007):

➤ Pedagogical

- Basic vocational education should prepare students for their future profession, and enable them to continue in the follow-up study
- Efforts to extend the practical teaching
- Secondary technical education should prepare students for the profession required by the labour market, create their own job or continue their studies at a higher level of education

➤ General

- Spreading of Vocational Technical Education - contributes to the development of the country
- Education in accordance with the guidelines specified in the law about the principles of education
- Improve the competencies achieved during the study
- Increase and improve the network of vocational-technical schools
- Equipping classes, laboratories and workshops to meet the requirements for high quality practical training
- Support the transition of graduates into the labour market
- Contribute to a lifelong learning strategy

- Provide education of teachers in pedagogical, didactic, technical and organizational way
- Training for technical and administrative staff of the school
- Encourage schools formal relationship with the labour market through:
 - Creating a structure of levels of professional qualifications
 - Creating educational courses, taking into account the needs of the country
 - Implementation of Tests of professional competence, which is a compulsory part of the completion of each level of education
 - Supporting the professional input of graduates in the labour market
 - Projecting the context of work into teaching curricula
 - Introduction of new subject called “technology project”
- Encourage innovation with a creative approach applicable in various areas of education:
 - Creating training courses according to area of education
 - Creating educational programs that will give particular emphasis on the achievement of key competencies
 - Introduction of clear requests from students
 - Create a folder for each educational course, creating a manual for each subject
 - Introduction of the subject dealing with civil, moral and cultural upbringing
 - Development of computational methods using modern computer technology
 - Introduction of education in computer technology and computers
 - Creating the concept of flexible curricula that reflect the needs of pupils

All of SAS are exclusively supported by the Angolan Government. And the supports vary from school to school, it is given gradually, and it can be because of:

- The period of the RETEP new curricular plan implementation (between 2006 – 2009) – school in which the draft/plan were earlier implemented had better

- support- no delay in allocation/providing the necessary means to support/ensure suitable the school work
- geographic distance – long and complex process of transfer the means necessary- it take time to plan and transfer the means
 - amount of student and teacher – the more is the internal activities, the more is the necessity to spend on consumption
 - the charge of boarding house- amount of internal student and teachers boarded – they have three time meal per day (is it a right or a aid of the government)
 - Projects of the school
 - the found available for the ministry of education

2.2.3. RETEP

“Supporters of vocational education and training assert that TVET produces ‘specific human capital’ which embody the advantage of imbibing specific job-relevant skills that can make the worker more readily suitable for a given job and would make him or her thus more productive (Tilak, 2002)” cited by Oketch (2006).

In base of the new project (RETEP), practical education/training in Angola for technical subjects occupies 50% of all curriculum of each specific course, and other 50% is occupied by general subjects (25%) and science subjects (25%). PE is supported by new specialized facilities equipped with respect to their mission.

From long time the Ministry of Education in Angolan (MEA) under support of its Government is preoccupied to solve the concern fact, but the civil war was big obstacle to make changes in Educational System (ES), especially in order to TVE which was poor in practical education and the teaching results were to concern– High cost, low production and no qualified absolvent. According to CAARE (Comissão de acompanhamento das actividades da Reforma Educativa), commission for monitoring the activities of the new ER, in 1978 (3 years after Angola get independence - 1975) was made changes in ES. And in 1986 held a analysis of efficiency of the change done at Regular Basic ES and the results were negative. These ES was unsuccessfully because were implemented in such environment of war (civil war, started Angola get after independence) (Zau in Angop, 2011). Before

the Educational reform, the Angolan ES was in dire, almost teachers and students met strong problems in teaching and learning process because facilities in schools have been totally inadequate to number of pupils and schools focus.

Therefore, in 2001 was unable to implement a new Educational Reform for TVET. It aims to the creation of better teaching condition, better capacitation for students including course of capacitation for teachers enhance the territorial productivity and quality of human resource or improve the amount of people vocationally educated and trained to respond and support the socio-economic necessities of the country and give better condition for education and skill capacity opportunity for young people.

The recent changes seen in level of TVET are supported by Angolan government count with hand of Luis Company expert in TVET educational projects development. The company was selected in base of its long experience (from 1990) in range of developing integrated Education and Vocational Training in the areas of industry, management and services, agriculture and fisheries development and technical education social military. In Angola with the Ministry of Education (ME), the company has actively participated in Project RETEP - Reform of Technical and Vocational Education. The involvement in RETEP project includes among others the following activities (Luis, 2010):

- curriculum Development of new courses
- capacitating of teachers
- the School Organization
- evaluations of Teaching Quality
- providing Laboratory

The RETEP is the one accredited project concerned with the rehabilitation and introduction of the essential works or elements lacking for the healthy and satisfactory functioning and production of the TVET specialized schools.

Under the law about the nature of the education system, currently technical vocational education and Training (TVET) is divided in two cycles or levels of

seconcondary education - *basic vocational education and secondary technical education* (MEA, 2009):

- The first cycle (Low-level secondary education) - The Basic Vocational (professional) Education (BVE) – last three years of vocational education after the primary education (1st - 6th grade) successfully achieved. BVE include de classes of 7th - 9th grade, ended with final exams.
- The second cycle (Up-level secondary education) - The Secondary Technical Vocational (Professional) Education (STVE), has a duration of three years of education and training after completing the first cycle and pass the final exams of 9th grade successfully. It includes 10th - 12th grade and is ended by examination of professional skills (competence).

2.2.4. The aims of RETEP in Technical Vocational Education and Training System (TVES)

The goals of RETEP project is aimed to the post-conflicts socio-economical development of Angolan society. And these goals are:

- ✓ To supply and ensure VE for all young people at school-age, jobseekers and workers within the country
- ✓ To prepare young people and job seekers skilfully to face the current and future needs of Angolan society.
- ✓ To provide desirable knowledge and skills of job competence demanded in labour market and for self-employment.
- ✓ Provide better teaching and learning conditions for teacher and students for better evolution of their knowledge and skills, such as adequate infrastructure and equipped, including specialized facilities, materials and equipments essential for practical education.
- ✓ Support the capacitating of teachers to improve their teaching skills
- ✓ Provide conditions for students and teachers develop general and scientific knowledge.

2.2.5. *The exams of professional competence and dual certification at TV schools of agriculture in Angola*

The test consists of a thesis defense (practical and written) at the commission, and it focuses on the technical and science education relevant to the individual educational courses, and often refers to the practical application of some technical character or development. And the training courses offer the opportunity to obtain dual certification in relation with:

- Businesses - a certificate of the level of the vocational qualifications
- Continuing studies - a certificate of the degree of study and previous results enable entrancing and studying at a higher level.

“...many of the arguments over technical and vocational education and training continue to rest on the assumption that vocational training is more specific to job entry than general education. This assumption may be right with vocational education curriculum of 20 years ago; but wrong today. Today vocational education is seen as training for future training; not as a way to facilitate job entry, but as a way to facilitate vocational-specific skills over a lifetime” (Oketch, 2006).

2.3. Characteristics of practical education in AET

Practical education is a specific training program implemented for to build sensorial and motor skills relevant for a job management and produce manpower ready to produce or do agricultural works according to its level of ability or TV qualification.

Practical education is a program of specific trainings relevant for job-skills building (Oketch, 2006). Practical empowerment is described as a desirable outcome of education for development. Practical empowerment includes acquiring marketable skills as well as capabilities to critically give direction to one’s life. But the education leading to this outcome is desirable for all (Blaak *et al.* 2012).

Practical education is a complex educational project with specific needs to fulfil the training program and achieve the target goal – skills. The quality of practical education determines the provision of means necessary to fulfil the learning program.

In the different levels of vocational education pupils are mainly gaining skills at practical/training lessons in accordance to the curricular parameter (type of course and amount of practical hour per week) of the practical education.

Education and training are, in some cases, used inter-changeably, although training is often used in association with the teaching and learning of specific skills (FAO, 1997). According to Kříž (2010), Skills can be understood as the ability of a person to do a specific task. It is suspended by congenital conditions, but it can be achieved by learning and training. Doing that activity must be conscious and skilful. According to the nature of learned activities skills can be divided into: motor, sensory and intellectual skills; students usually do not create these sensory skills in practical lessons separately. It is mostly a combination with the motor skills. These are called the sensory motor skills. All kinds of skills are usually intertwined in the teaching of practical subjects. The result of training in carrying out the activities, are also habits. The various types of skills or habits and knowledge students do not learn them separately. All the skills and knowledge are closely related, mutually interrelated and complementary.

The formation of every skill depends on two basic didactical conditions: on relevant knowledge related to the topic and on training (practical) activities. Knowledge is one of the two basic terms used in practical education/training and it can be understood as a set of mastered imagines and terms, theories and complex structures of knowledge which the pupils learned through school education, self-learning and other influences (Kříž, 2010) and practical empowerment includes acquiring marketable skills as well as capabilities to critically give direction to one's life (Blaak *et al.*, 2012) by a range of practical lessons or trainings.

2.3.1. *Main objectives of practical education*

The objectives of practical education are:

- To develop practical skills and professional attitude in one self lifetime
- To familiarize student with his future job activities
- Respond the demand of specific professional skills in the labour market
- Prepare the participants/students to be ready to performing practical activities related with the attended course.
- To facilitate the accepting and adoption of new mechanics or technologies into the length the attended course
- To learn technical method of knowhow to produce certain products
- To combat the unemployment, poverty and its derivates
- To gain respect and self reliance in work

2.3.2. *Facilities for practical education and their operation*

To fulfil the task of Agriculture practical teaching or education, some literatures mention and recommend specially the presence of specialized facilities at Agricultural school for a better vocational education and successful training of the future techni (Slavík *et al.*, 2007). Facilities are in generally means or necessary tools used to achieve specific training goals of skills building, without them it could be difficult. According to Slavík *et al.* (2007) and Kříž (2010), the main facilities for Agricultural Practical Education at Secondary Vocational Education are:

- ✓ specialized classrooms
- ✓ laboratories
- ✓ workshops
- ✓ demonstration halls
- ✓ botanical gardens
- ✓ arboretums
- ✓ school gardens or experimental plots, greenhouses
- ✓ practice lands

- ✓ school farms (school farms, school forest district, school gardening, school fisheries, etc.)
- ✓ breeding facilities – demonstration areas for animals - training stables
- ✓ have an agreement with organization or company for practical teaching

Particularly these specialize facilities were characterized in the way (Slavík *et al.*, 2007):

- **Laboratories**

Laboratories are used primarily in the practice of vocational subjects, such as laboratory analysis of soil, feeds, fertilizers, seeds, assessment of product quality, etc. In terms of equipment should be monitored if the students have enough tools and are able to work mostly independently, rarely in pairs.

- **Specialized classrooms**

Specialized classrooms can be established for the main vocational subjects. They are furnished with appropriate furniture and equipped with tools for teaching the subject and appropriate didactic technique. Students can see and have the appropriate equipment and materials not only during the lessons but also during breaks or at other specified times. The advantage for the teacher of vocational course is that he do not have to carry tools and can create more complex material resources needed for teaching. It is not appropriate for the specialized classroom to serve as the "basic classroom" for a class, then the requirement of the specialized classroom is relegated for capacity reasons.

- **Workshops**

Workshops are common and essential facilities primarily at secondary vocational schools, where it serves for professional training of students. Secondary vocational schools use the workshops to teach some topics in the course practice, such as woodworking, metal work, maintenance and repair of tools and machinery etc.

- **Demonstration halls**

The demonstration halls can be used for teaching practice in the adjustment, maintenance and training of using machines, in exercises of technical subjects and to show modern machines.

- **Botanical gardens**

Botanical gardens are established mainly at schools with agricultural, horticultural, forestry and related fields. These facilities mainly:

- students use in the practical cognition of plant species
- used for monitoring various developmental stages of plants
- provide the opportunity to get acquainted with less known plants
- serves to teachers as a source of natural materials for teaching
- serves as the field of aesthetic education
- also allow experimental work, etc.

The arrangement of botanical gardens may be different, may have the systematic part (arranged according to botanical system), its application is primarily in biology, and the demonstration part, which is arranged according to the purpose of professional education. It can be divided by groups such as agricultural crops (cereals, root crops, fodder, etc.).

- **Arboretums**

Arboretum is planted only by trees. It is mostly established close to the schools with horticultural and forestry fields.

- **School gardens, greenhouses, parks**

School gardens, greenhouses, and parks are used primarily for the practical teaching of vocational subjects, but the school garden and a greenhouse can still fulfill an economic function.

- **Practice lands**

Practice land is the land of a small size (for example, 0.5 ha and more), which is used for practical training of students, especially for gaining skills in operating farm machinery. It is also used for training such as plowing, soil preparation, etc. The practice land is not expected to have any significant economic recovery.

- **School breeding facility**

School breeding facilities include often breeding of small animals (rabbits, chickens, pigeons, goats, sheep, etc.) and can be placed in the school buildings or at a school farm. Allow students to have a frequent contact with animals during caring about them and to develop basic work habits especially for students in lower grades.

For school breeding facilities can be also considered aquarium or bird aviaries placed in the school. While maintaining the principles of hygiene these facilities bring daily observation of animals to students.

- **School farms (school farms, school forest district, school gardening, school fisheries, etc.)**

School farm is a complex specialized economic unit that is designed to show students an example of a possible farming under specific conditions with which they are closely acquainted throughout the study, because there will absolve most of practice courses (teaching, individual, etc.), some subject exercises and fulfill other tasks.

The advantage of school farm is:

- are purpose-focused (there are conditions for educational purposes)
- the staff at school farm works often as instructors of practical training (they have or they should have a teaching qualification for this activity)
- easier arrangement between technical staff and professional teachers about the practical work of students (the fulfilment of certain topics of practice)
- enable teachers of vocational subjects to be in close contact with practice and use their knowledge in the lesson
- allow research activities to teachers of vocational subjects

School farms from the historical point of view proved its justification, although it is not the only way to ensure the practical training of students of agricultural fields. Practical training may be realized for example, on school grounds, on which the school will operate in a secondary economic activity.

- **Contracting companies for teaching practice**

The practice of students may also take place in contracting companies. This allows students to work for example in specialized high-tech enterprises in individual practice, etc. The school will also use contracting companies if the school has not a school farm or on the school farm there is a lack of some category of animals, etc.

Practical teaching on such workplaces must be carried out only based on pre written *Agreement about the practical education!*

Specialized facilities are established especially to fulfil the school program and to adequately train students for achieving qualified personal and professional competence/skills. Facilities for practical education are specialized workplaces essentially used for teaching and learning process. They are places specially equipped with specific material in accordance to their particular mission within the agricultural school, and they are used primarily for (Slavík *et al.*, 2007):

- practical training (subject exercises, teaching practice, professional training);
- research activities of teachers and students (experiments with manure, feed);
- verification of new technologies, varieties;
- source of current information from the service (economic results,);
- source of tools - products of nature to illustrate the theoretical teaching;
- in general to fulfil the principles of combining theory with practice.

2.4. Evaluation of practical education in AET

In this post-conflict era the practical education guided by the new project RETEP for vocational courses offered by ASS in Angola seem to be a great strategic plan implemented after 27 years of war. The Angolan government is largely investing in TVET because he relies on the benefits that RETEP project can bring to such peoples who lost time in the wars and such for knowledge and new skills to adapt in new kind of life.

Secondary agricultural education has been developed to give opportunity of educational and vocational skill to the young people.

Practical education has been a key for skills development and on it depend the specific level of job-relevant knowledge and skills of the absolvent interesting to the labour market.

The curricular percentage of practical education education for TVET has been increased but teachers and students at SAE in Angola are negatively affected by the lack of didactics material and equipment to fulfil the projected hour of practical education.

3. Objective of the thesis

The main objective lies in the analysis of the current situation of the practical education at AET institutions in Angola. In order to achieve the main objective, the following specific objectives were formed:

1. to set up parameters of evaluation of practical education in AET
2. to compare the collected parameters among the schools
3. to conduct SWOT analyze of AET in Angola with regards to potential interventions of governmental organizations

4. Methodology

The research of this thesis occurred at two levels such as (i) view into the background of the topic based on study of the secondary sources, namely specific books, printed reports, and Online available documents and (ii) the field survey covering collecting data from eight (including the SAS of Kuito – CAEB of Czech cooperation) Secondary Agricultural Schools (SAS) in Angola.

4.1. The Survey

This chapter includes principal information how the survey was carried out, the strategic method used which enable the collection of several information about the Agricultural Education at seven Agricultural school situated in distant province and schools as much as were possible. And generally was possible the collection of data related with the new Educational Reform (ER) for Technical Vocational Education (TVE) in which is included the AET system in Angola.

The plan included 7 (seven) SAS (Secondary Agricultural Schools), and geographically these schools were found in the provinces of Huíla, Bié, Huambo, Kwanza Sul, Kwanza Norte, Uíge and Malanje (see the map: <http://mapsof.net/map/angola-political-map#.T6rgMujUPRQ>). The methodology used during the research is summarised in the following diagram (Fig. 2), which express the data cycle of the research from the collection until the analysis, results and conclusion of the work

4.2. Data collection

The data were collected with the help of the following survey tools: Questionnaires, personal interview, group discussions and observation. So, the work started with elaboration of three types of questionnaires according to the selected target sub-groups students, teachers and the management of the school within the Agricultural Schools. The survey was officially approved by the Ministry of Education (ME) in Luanda.

4.3. Characteristics of target groups

The target group were divided in three sub-groups – the School management, teachers and students within the SAS's or ISAE. Therefore, the target groups had on the hand the correspondent questionnaires divided by category, and take a place personal interview with the management of the schools and teachers to expose doubt, explain and give personal opinions and similar event was done at group discussion with students. In overall following amount of survey tools were collected:

- ✓ Questionnaires – 520 received
- ✓ Personal interviews – 32 taken
- ✓ Group discussions - 20 taken

4.4. Questionnaires

The structure of the questionnaires was simple with objective questions easy to be answered. Most of the questions were designed as offering multiple-choice answers. In addition, some questions were partly opened with free space for providing one's opinion. Structurally all questionnaires involved the following parts:

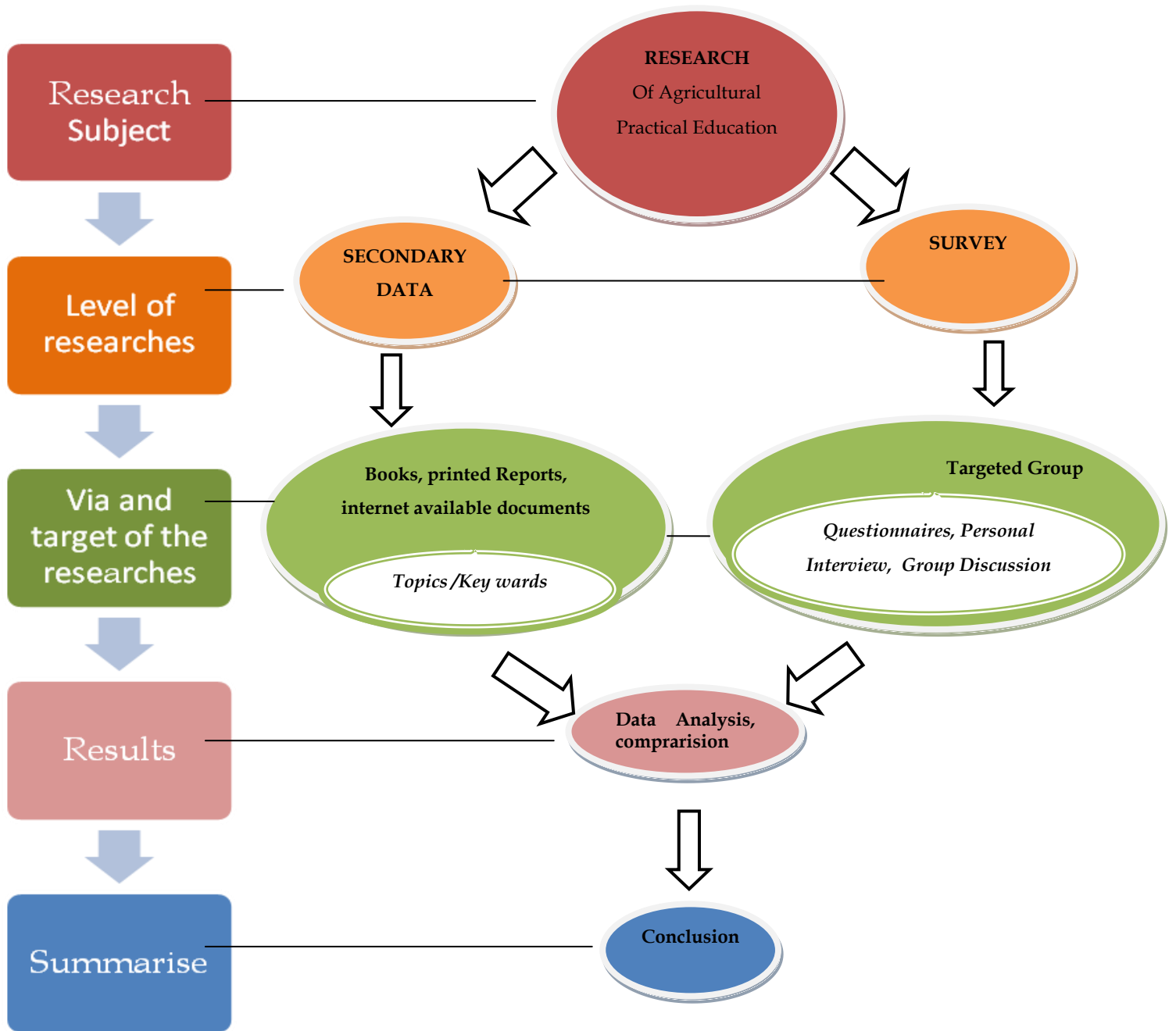
- I. Identification or basic information of the targeted group
- II. General questions about questions about the function of the school
- III. General questions about teaching and learning in common class - theory lessons
- IV. General questions about Practical lesson - farming practical activities, mechanization, practice of animal production and practices lessons in the laboratories and demonstrative lessons at workplaces
- V. The excursions events to the areas of crop production and animal raising
- VI. The general opinions from the target group
- VII. Attachments of didactics material essential for practical lessons

The questionnaires distributed for management of the school, teachers and for students are found on annex (number not yet available)

4.5. Personal interview, group discussions, photos

There were conducted 32 personal Interviews with the management of the schools and teachers and 20 group discussions with students. These events took place after them completing the questionnaire. And during the survey pictures (photos) were taken.

Fig.3: Schema of Data cycle of the research



Source: Author, 2012

5. Results and Discussion

This chapter has been created to organize, compare and evaluates the seven secondary schools of agriculture supported by the Angolan government and the one supported within the Czech Development Cooperation implemented in Kuito – Bié Province during six years (2004 – 2009). At these eight agrarian we found the target people of our survey which supply us the data which shape this work. The parameters used for evaluation of these eight agrarian secondary schools are:

1. Offered courses at different agricultural schools
2. Number of students at different agricultural schools
3. The number of specialized facilities mainly for practical education at different agricultural schools such as :
 - a. Laboratories
 - b. Workshop
 - c. School practical ground and demonstrative farm
 - d. Demonstrative hall of mechanization
 - e. Stable and poultry for animal creation
4. Number of teaching units of practical education at different agricultural schools
5. Excursion organization related to the practical lessons different agricultural schools
6. Didactics material or teaching aids for practical education at different agricultural schools
7. Students suggestions to teachers for improve practical lessons at different agricultural schools
8. Practical lessons in point of view of students of the different agricultural school
9. Excursion in point of view of students of the different agricultural school

These parameters are summarised on relative, evaluative and comparative graphs and table created with organizational propose to help dear reader to cache the information.

According to the results of our survey the ongoing ES for TVET has been guided by the new project of the educational reform so-called RETEP project. As a model in Africa, the new project for TVET forms a separate system which differs from general education system with its own institutions, teachers, programmes, and curriculum. Agricultural institutes for TVET are comprising by two different levels of education such as the lower-level (7th – 9th classes) and upper-level (10th – 12th classes).

5.1. Offered Agricultural courses

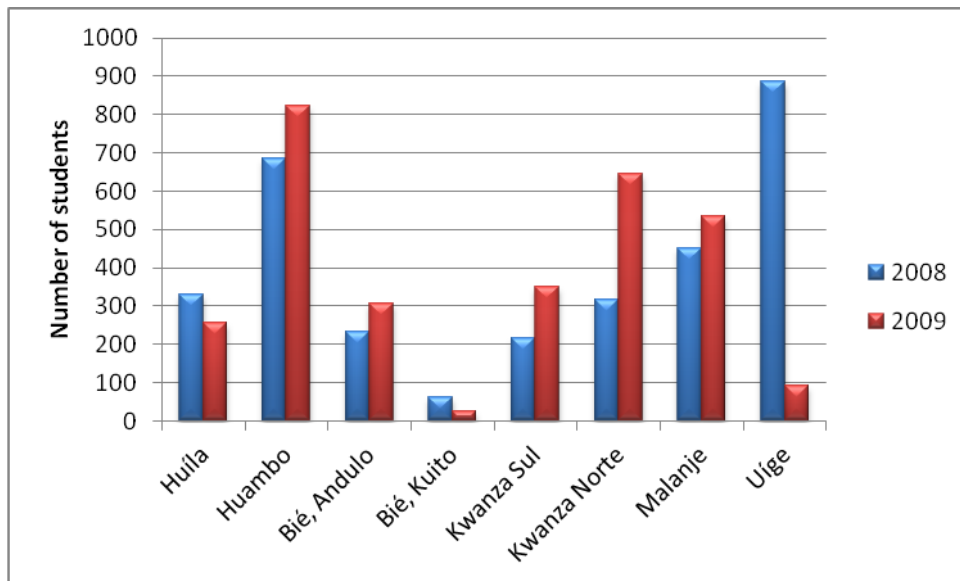
According to the new project (RETEP), agricultural institutes were built and equipped to supply variety of vocational course opportunities to the local population, such as: Animal husbandry, Crop production, Mechanization, Forestry, Agriculture management, Food and some polytechnic courses were implemented (in agricultural institute of Malanje). Respect to the school localization and its financial condition the amount of courses offered at each agricultural school/institute vary geographically from school to school. During the survey it was found out that there was no school offering the all eight courses at once. Despite to this some of agricultural schools were offering three different tracks of vocational courses, others four , and as exception the agricultural school of Malanje was supplying the most - five curricular courses, from which two are polytechnic courses (see tab. 3). The CAEB (Centre of agricultural education of Bié) supplied only on course of general agriculture to young people providing general knowledge and skills of agriculture and developing training and extension services for local farmers (ITS, 2010) affected by the wars.

Tab 3: Courses offered at different provincial agricultural schools in 2009

Course	Province							
	Huíla	Huambo	Bié (Andulo)	Bié (Kuito)	Kwanza Sul	Kwaza Norte	Malanje	Uíge
Animal production	yes	yes	yes		yes	no (Planning)	yes	yes
Plant production	yes	yes	yes		yes	yes	yes	yes
Mechanization	No	yes	yes		yes	no	yes	no
Forestry	no (Planning)	no (Planning)	no (Planning)		no	yes	no	yes
Agriculture management	yes	yes	No		no (Planning)	yes	no	yes
Food	No	no (Planning)	no (Planning)		no	no	no	no (Planning)
Electrical installation	no	no	no		no	no	yes	no
Building	no	no	no		no	no	yes	no
General agriculture				yes				
Number of courses offered	3 (4)	4 (6)	3 (5)	1	3(4)	3 (4)	5	4 (5)

5.2. Number of students (enrolled in 2008 and 2009)

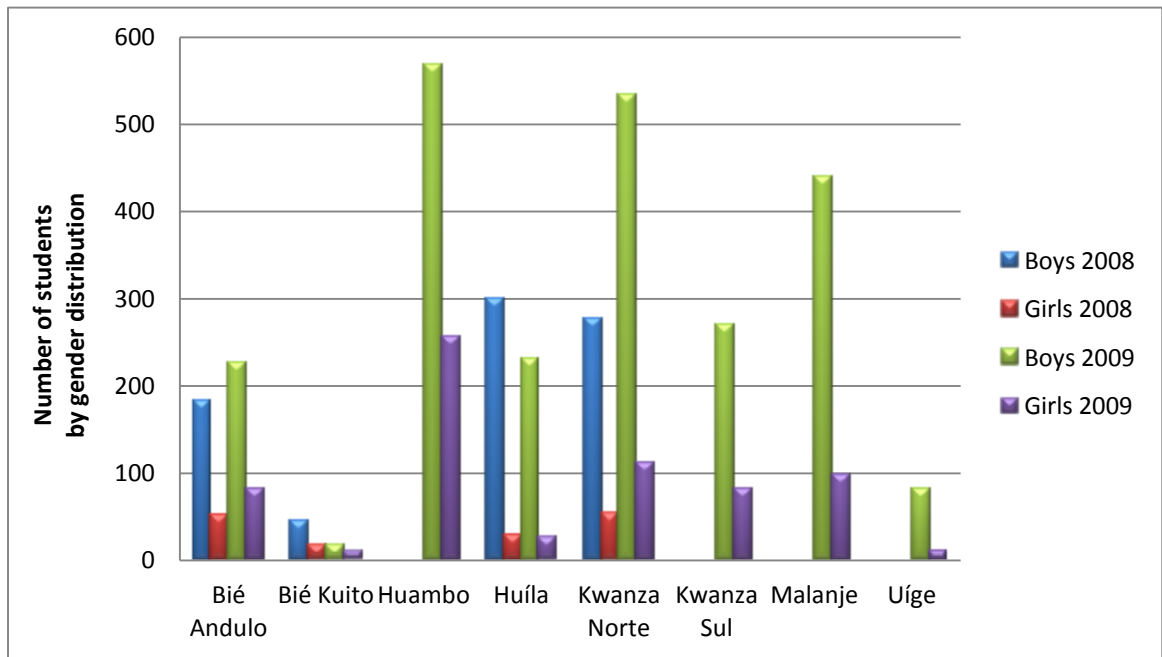
According to the management of the schools the demand for the vocational course tends to increase each academic year. The overview of the students enrolled in 2008 and 2009 is obvious from the graph 1. The agrarian institute of Huambo presents the highest number of students. This fact can be explained by the presence of a unique faculty of agriculture (Facultade de Ciências Agrárias) in the country of the unique public University (José Eduardo University - ex-Agostinho Neto University). The lower number of student enrolled was registered at the agricultural school of Bié – Kuito (CAEB), during 2009 academic year the number of students in enrolled reduced at Bie – kuito and Uíge because students had to move to the new agricultural schools opened in these provinces and in Uíge it had no success because of the distance of the new school and absence of transportation to carry students which live far from the school. Decline is seen also in agricultural school of Hula as stress the following graph.



Graph 1: Students enrolled in academic year 2008 and 2009 at secondary school of agriculture in different provinces

The students are admitted on the base of their age (less than 18 years old) and fulfilment of the requirement on basic education (6 years of primary education) without any entrance exams. The number of the enrolled students is limited by the capacity of a classroom with maximum of 36 students.

The gender inequality of enrolled students is obvious from graph 3. The significant difference in boys' be hoof can be explain by several factors such as: (i) the technical fundamentals of agricultural courses causing less interest of girls to study such ones, and (ii) cultural habits of traditional Angolan society where education of girls is still not widely desired. Girls often become pregnant in early age (14 years old) and due to maternity and households duties drop school education earlier. However, the positive change in favour to number of enrolled girls can be expected in future.



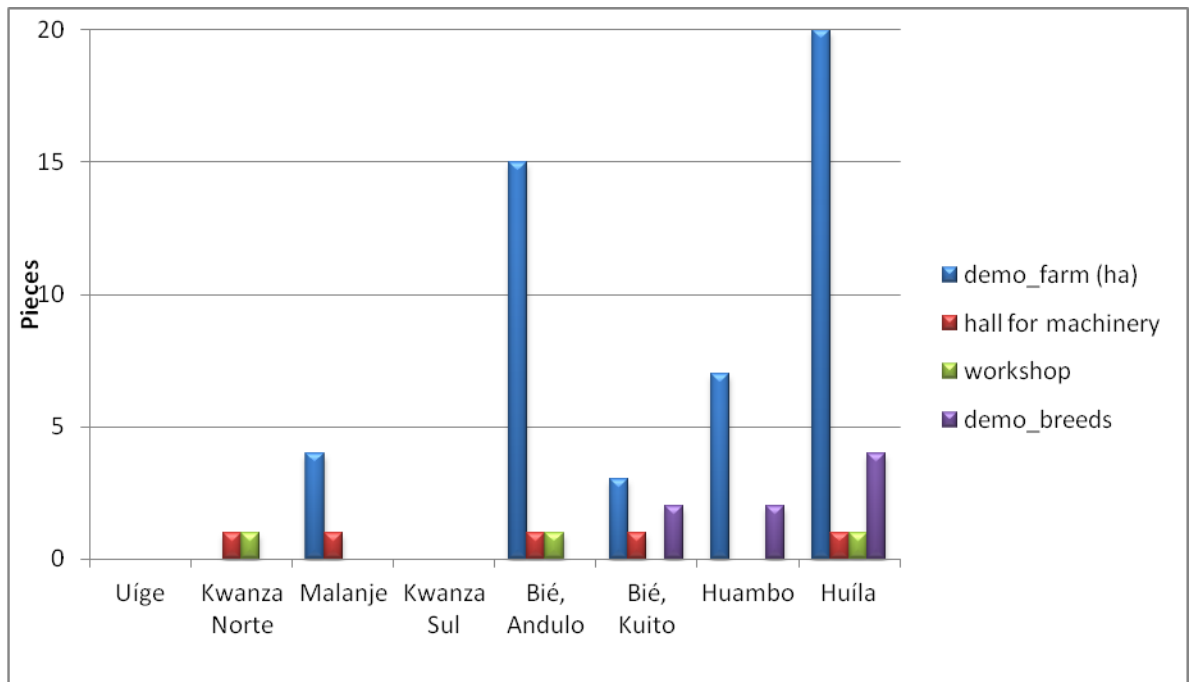
Graph 2: Gender distribution of students at TV schools of agriculture

5.3. Specialized facilities at a school complex

According to the RETEP (2001) all school complex shall be equipped with relevant laboratories, workshops and demonstration areas in full accordance with the alignment of the school and requirements on the graduate's profile. Laboratories, workshops and demonstration fields serve for practical education, demonstration and experimental activities. Operation of these facilities shall be funded from state resources.

Most of the school dispose of five laboratories focused on chemistry, physics, biology, zootechnics and information technologies. The laboratories are well equipped in terms of educational technical means and didactical material. However, the facility is not always used because of the lack of specialized teachers as in the case of Kwanza Norte.

The comparative overview of the practical facilities is shown in Graph 6. The practical facility involves also demonstration farm with crop and animal production, and a hall for machinery and workshop for machinery maintenance and repair.



Graph 3: Comparison of practical facilities

The demonstration farm at the school in Malanje consists of 1500 ha, however, only 4 ha are used for cultivation of pineapple, bananas and citrus. The animal breeding has not been developed so far. In the future poultry, pig and goat breeding is planned. The demonstration farm in Andulo, Bié province consists of 15ha on which maize, beans, potatoes and sweet potatoes are cultivated. The yield serves for needs of school canteen. In addition, a greenhouse is installed equipped with drop irrigation.

The animal breeding is represented with poultry breeding focused on laying hens. At the time of a survey the installation of the technology was carried out. The demonstration field includes also a hall for agricultural machinery where tractors, ploughs, harrows, sowing machine and sprayers. The machinery comes from China. According to the teacher of machinery after several hours of operation the machinery is at very bad conditions and not useful for further utilization.

The future development of the demonstration farm:

- Breeding of laying hens and eggs production
- Full utilization of the greenhouse for continuous vegetable production
- Establishment of the centre for processing of agricultural products.

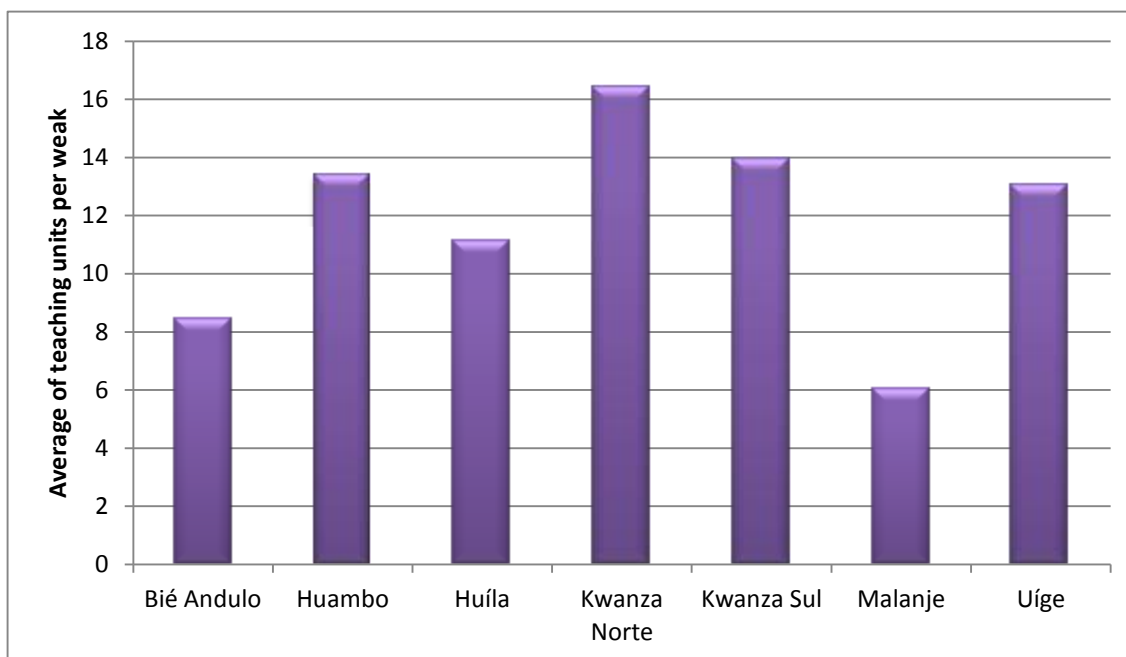
The school in Kuito included a rented 3 ha demonstration farm. Maize, beans, peanuts, pineapples and vegetable were cultivated. Several mango trees were planted. The farm disposes of its own well for irrigation and water supply for animals. The yield is divided among the landlord, animal consumption and students. The animal production includes an extensive goat rearing, poultry and duck breeding.

The school in Huambo dispose of a 7ha demonstration farm. The farm has no water source nor irrigation system. Soil is poor, partly contaminated with chemical substances of eucalyptus. Maize and beans are mainly cultivated. A greenhouse serving for vegetable cultivation was installed. Breeding of milk cattle (two heads of hybrids and one head of Jersey) serves mainly for experimental purposes within the research on correlations between feeding and milk nutrition under local conditions. Further, goats are bred. Both breeds are extensive. According to the director, the future development of the demonstration farm lies in: (i) establishment of poultry house, (ii) improvement of soil quality, and (iii) milk production.

The school in Huíla disposes of school fields of area more than 25 ha on which maize, beans, cassava, pineapple, banana and vegetable are cultivated. Most of the yield is used for animal feeding, supply of the school canteen; the rest is sold on markets. The school farm involves breeding of pigs, goats, poultry (hens and turkeys).

5.4. Number of teaching units of practical education

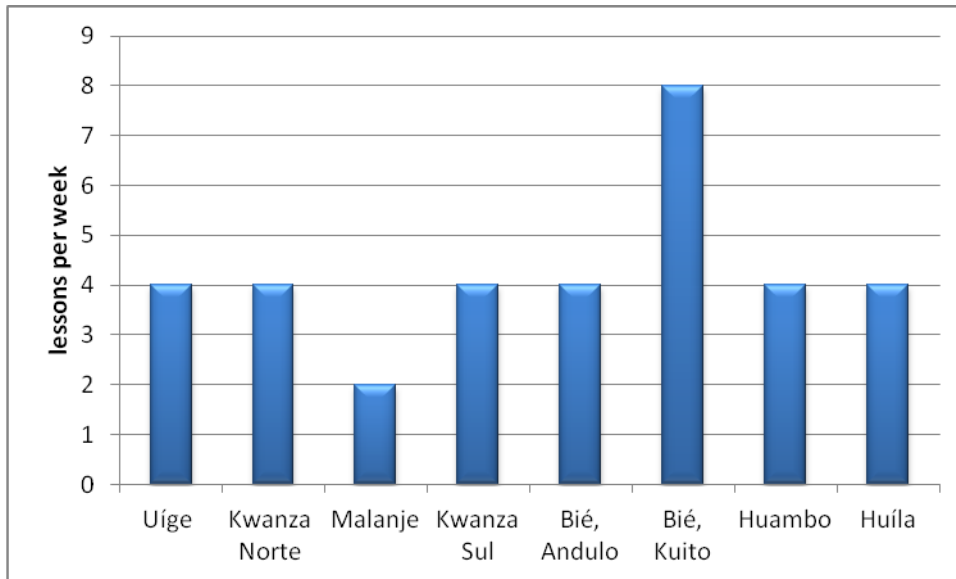
Most respondents (teachers) are happy with the the number of teaching unity per week guided by the new curricular plan. Therefore they complain the lack of teaching material and equipment to aid the practical hours, and they point to the lack or absence of suitable technical and professional books which include steps to be followed during the practical lessons and the limited access to computer and internet. These problems strongly limit teachers to better prepare the lesson programmed and be prepared to assume completely their classes. Some of them say that need change in the content of particular subject to correspond to the perfill of its absolvent. The following graphic (7) stress the variation of data collected from the respondents at different agrarian schools.



Graph 4: Average of teaching units per teacher per week

5.5. Number of lessons devoted to practical education

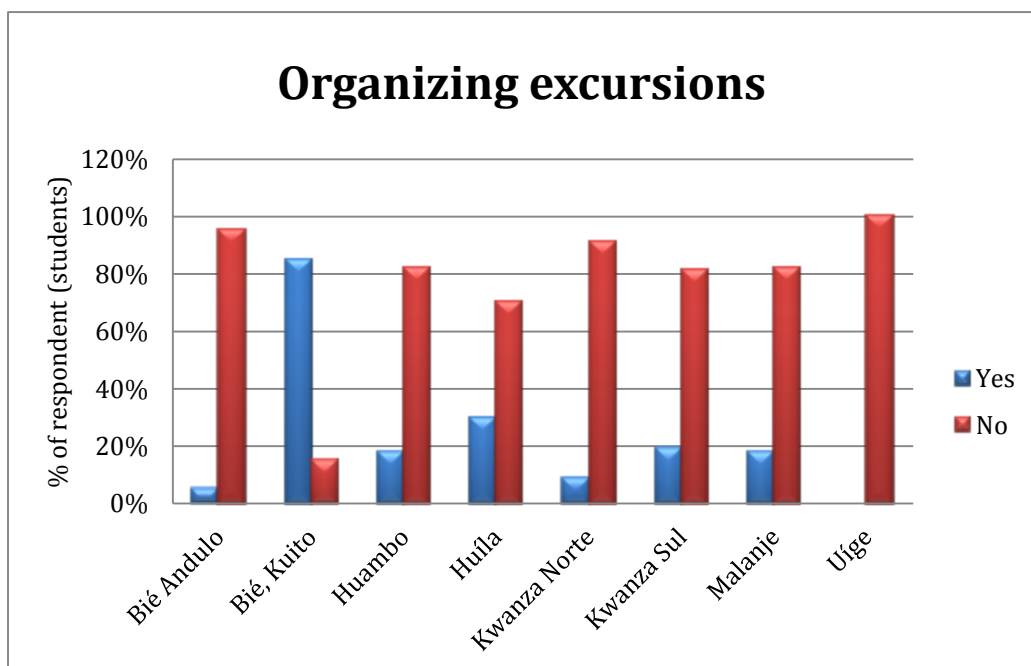
The number of practical lesson at eight agrarian schools varies from two to eight. Most of them supply four lessons of practical education. Therefore, the lowest number of practical lesson we registered in Malanje (only two practical lessons per week) and the highest (eight practical lessons per week) was running in CAEB (Bié – Kuito). During our survey we notice too that practical hours “*de facto*” vary with the amount of some materials and equipments basically necessary and useful for practical lessons. Despite to this, most of the respondents from the seven schools of agriculture guided by the RETEP say that are not happy with practical hours – the need more practical lessons.



Graph 5: Number of lessons per week devoted to practical education

5.6. Organized excursion related to practical lessons

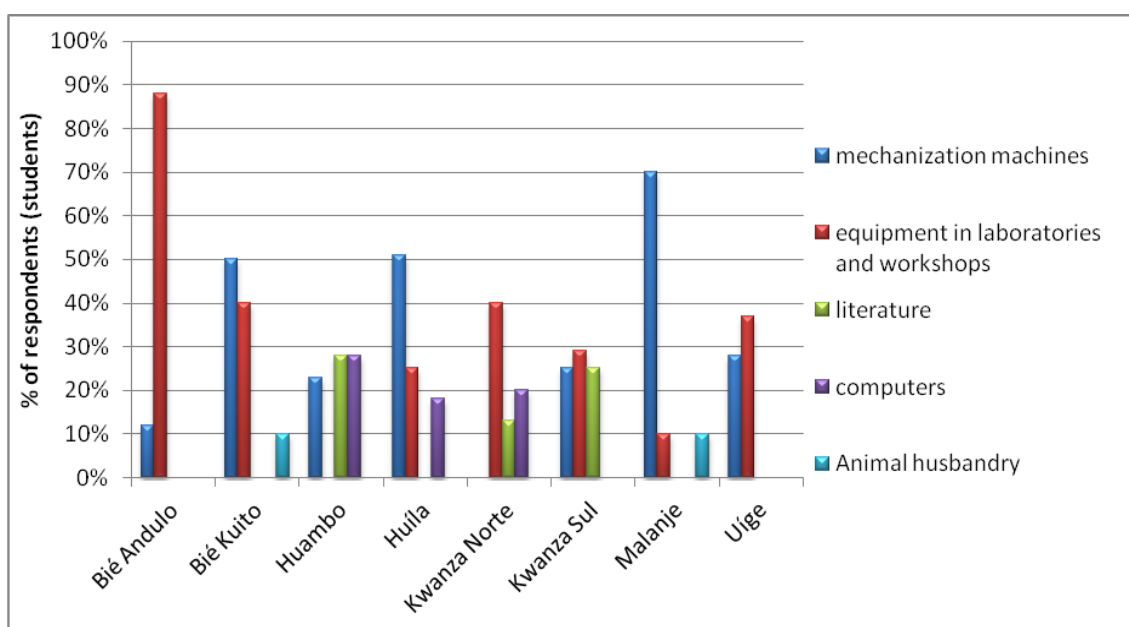
The teaching program of vocational subjects at agrarian schools lacks for school excursion visiting to the places where students can meet or see in the real how the agriculture system run to get time to familiarize themselves with the rural environment.



Graph 6: Organizing excursions

5.7. Didactics material and equipments, obstacles impeding practical education

Despite to the lack of teaching materials and equipments almost all respondents pointed firstly the lack of equipment in laboratories and workshops and the lack of mechanization machineries and professional literature mainly for practical lessons orientation of the vocational subjects. The following graphic stress the variation of data collected from the respondents about the main barriers impeding the quality of practical education at all eight secondary school of agriculture.



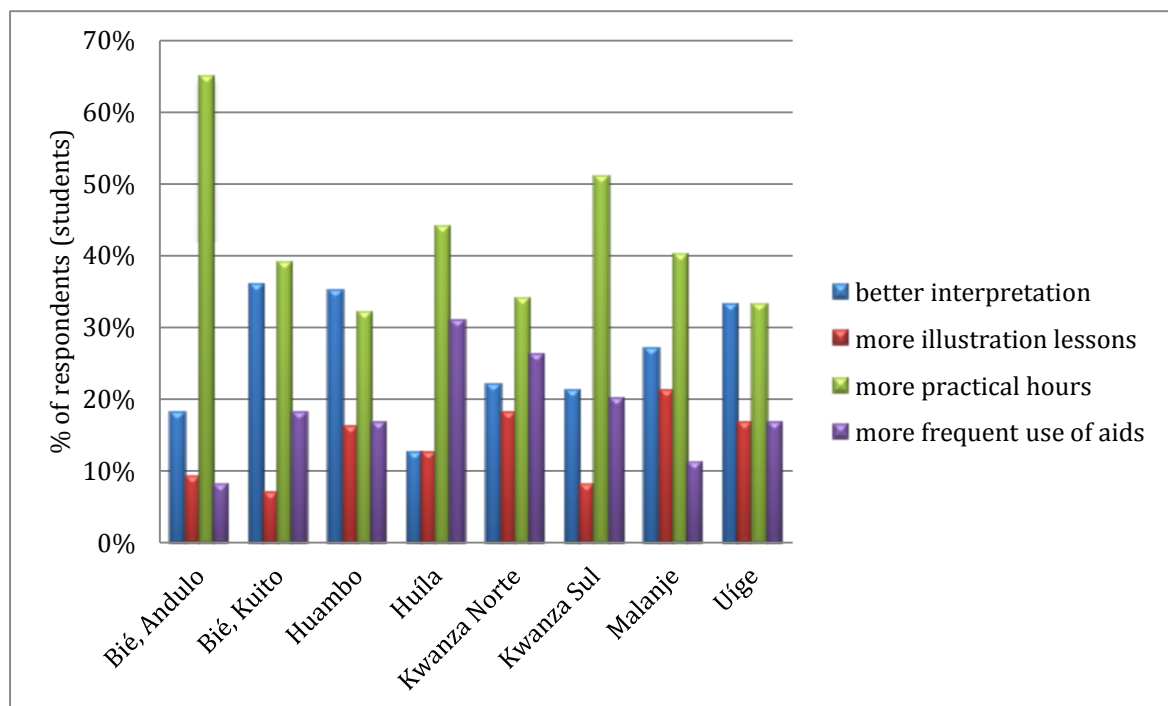
Graph 7: Obstacles impeding practical education

5.8. Practical education in point of view of students

The majority of students are not happy with the way how practical lessons are been carried out at schools, most of them say not be enough the amount of practical hour. In the agricultural school of Bié-Kuito was registered the lower (50 %) number of students not happy with amount of practical hours per week, and they suggest more hours of practical education.

5.9. Students suggestions to improve practical education

The respondents (students) suggest more hours of practice, more capacitating of teachers to better TV management of their subjects and more frequent use of aids. The graph 11 stress the relative variation of the data collected from the respondents of different agrarian school.

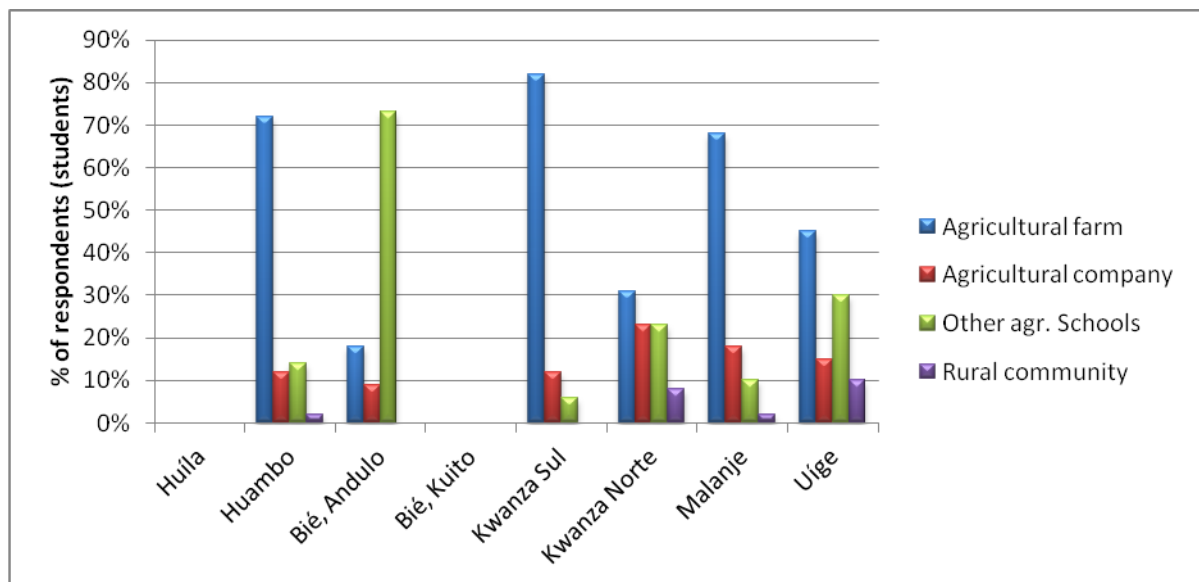


Graph 8: Suggestions of students for improving teaching quality

5.10. Excursion in point of view of students

The respondent (students) complain about the lack of excursion organization and they say that it can bring to them a big advantages because they can seeing in the real the way how agricultural sector/system has been developed in a particular farm, company or region, and imagine the reality of its future profession. So, they can prepare themselves consciously for the possible work condition after they graduate.

The following graphic stress the relative variation of responses collected from different respondents (students) at all eight agricultural schools. The respondents from the agrarian school of Huíla and Bié-Kuito are the one which were happy with the organization of some excursion, they did not suggest to any excursion.



Graph 9: Students suggestions of areas to organize excursion

The excursions are much more than some demonstrative visit as it seem to be more often it should be carried out to help student be sure about their future work and make decision about their life orientation and the profession which seem to be better for them to devote their life, otherwise most of them can finish their vocational course without enough moral immunity/power to resist the impact of the first physical contact with the new place work condition and regret/repent of the choice of the kind of vocational course chosen and say that “the school training has been wasted time”. Few of them can successfully overcome the situation and most of them can loss their job opportunity by skills disqualification.

6. SWOT analyze of agricultural education and training in Angola

This capitol was shaped identify the strengths, weakness, opportunities and threats of AET in Angola under domination by the RETEP project supported by the ME of Angolan government.

Strenghts

- More investment in AET
- New infrastructure for AET – six new school complexes were built in different province (except the holdest school complex from Tchivinguiro-Huíla because it's still good condition.
- Boarding house available at ASSs for teacher and student and free three meals per day available for them.
- Created a new strategic plan for secondary school of AET
- Better teaching and learning condition for teachers and students
- Creation of appropriate specialized facilities for practical education
- Existing processed materials - study courses - curriculum, syllabus

Weaknesses

- Dependence on professors from abroad (Cuba and Brazil) - limited contracts (two years)
- Lack of own pedagogical capacities of general and vocational subjects
- Lack of teachers competence in practical training
- Teachers have a lack of pedagogical expertise
- Incompatibility of the syllabic content for certain courses - Need for syllabic correction of some subjects

- Lack of equipment for practical education and delay in the supply of teaching materials
- Practical training is often missing or not good
- Unable to follow the materials of the School reform - too extensive
- The low number of girls attending TVCs at ASSs

Opportunities

- Strengthening capacities of Angolan teachers, especially teachers of vocational subjects and practical training
- To equip the workplaces for practical training - laboratories, workshops, school grounds
- Support for practical training and excursions
- Creating a network of agricultural colleges
- Provide access to TVCs in the field of agriculture without feminine gender marginalization

Threats

- Unclear budget planning for the next year threatening the smooth running of schools
- Unsolved situation with foreign teachers, especially in terms of salaries
- The political status of the country

7. Conclusion

Even though the investments applied to develop the AET seems to vary from country to country or distinguished among the African government, agricultural practical education somewhere else in SSA has been developed different learning ways because it is vital and plays a crucial role in improving agricultural output mainly of small-hold farmers' family, and used as weapon to reduce the unemployment, poverty and its derivatives.

Quality practical education is essential especially for the countries which are hardly influent by war. For example, in Angola all the population in the age of 15 – 50 years is dramatically affected by the civil war. All the infrastructure and agricultural land was destroyed, all the agricultural know-how was forgotten. The only way how to revitalize and resurrect this land is to give relevant knowledge and skills to the people. Practical education is much more powerful weapon to fight with all the problems of developing countries (to improve the production, struggle the famine, and to reduce the poverty and the critical rate of unemployment), than the main part of the investments which are currently implemented by the governments in African countries.

I think, the Angolan government should pay more attention to new schools of vocational education, where the new project was implemented. These schools have for example problems with lack of material and equipment for practical education. From my point of view, it is soon to make a conclusion about the effectiveness of the new project, because all the measures were implemented before relatively short time, and it did not get time to develop enough. The government has to support the new schools, to make the goals of the new educational reform to be achievable. The necessities of the schools to fulfill the program depend a lot on the investments from the government.

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9. Abbreviations

- ASAEA – Analysis of Secondary Agricultural Education in Angola
- CVET – Continuous Vocational Education and Training
- SAE – Secondary Agricultural Education
- UNITA - União Nacional para Independência Total de Angola
- MPLA - Movimento Popular para Libertação de Angola
- HDR – Human Development Report
- GNI – Gross National Income (per capita)
- HDI – Human Development Index
- USD – United States Dollar (American Dollar)
- GDP – Gross Domestic Product
- MEA – Angola’s Ministry of Education
- STVE/S - Secondary Technical and Vocational Education/ School
- SAE - Secondary Agricultural Education
- ISAE - Institutes of Secondary Agricultural Education
- SSA – Sub-Saharan Africa
- ES – Educational System
- AET/RET – Agriculture Education and Training (convectional terminology)/Rural Education and Training (traditional terminology)
- VE – Vocational Education
- TVET – Technical Vocational Education and Training
- ATVET – Agriculture Technical and Vocational Education
- MEA –Ministry of Education in Angola
- BVE – Basic Vocational Education, correspond to Lower-level of secondary education
- STVET – Secondary Technical Vocational Education and Training, correspond to up-level of secondary education
- FAO – Food and Agriculture Organization (from UN – United Nations)
- RETEP – Reforma do Ensino Technico e Profissional - the so-called new educational reform for a TVET in Angola
- AS(s) - Agricultural school(s)
- ASS(s) – Secondary Agriculture School(s)
- EFA – Education For All
- CAARE - Comissão de acompanhamento das actividades da Reforma Educativa
- MDGs - Millennium Development Goals
- TVC(s) – Technical and Vocational (professional) course(s)

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Annex 1: Major problems facing AET throughout the SSA region in the mid-1990s

lack of a coherent policy framework for agricultural education;
lack of dialogue on policy issues, either between donors and beneficiaries, or among the donors themselves;
weak or non-existent linkages among the various training institutions involved; both across the divide between formal and non-formal modes of education and between the various stakeholders in a rural knowledge system, including training, research and extension providers, as well as end-users at household and community levels.
lack of labour market studies either for professional and vocational training, or of training needs assessment among rural households. (The identification of new target audiences, and the training needs of women in particular were also generally overlooked);
the management of training organisations often lacked capacity, especially for strategic planning, pre-appraisal, monitoring/evaluation and for entrepreneurial thrust;
training organisations faced difficulties in recruiting staff with the skills, aptitudes and commitment for all the activities required for effective rural training (including teaching, research, outreach and networking);
institutions often lacked a sufficient 'critical mass' of change-oriented staff to ensure successful innovation;
teaching curricula were frequently rigid and failed to adapt to changing priorities in the external

Source: Wallace, 2006



Picture 1: Group discussion with students during the survey of the project in Ndalatandu - Kwanza Norte (facilitated by the author)



Picture 2: Practical lessons on school demonstrative ground in Bié – Kuito

Kwanza Norte



Picture 3: Hall of agricultural mechanization



Picture 4: Practical lesson in the laboratory of chemistry in Kwanza Norte



Picture 5: The secondary agricultural school of Tchivinguiro - Huila



Picture 6: Respondents filling the questionnaire during survey



Picture 7: Stable for practical education of the secondary agricultural school of Huambo



Picture 8: The greenhouse of secondary agricultural school of Huambo



Picture 9: The stable of secondary agricultural school of Huambo



Picture 10: Agricultural school complex of Malanje