



**Developing a strategic plan for
Kizimbani Agricultural Training Institute (KATI),
Zanzibar, Tanzania – a contribution**

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Executive Summary

The Kizimbani Agricultural Training Institute (KATI) fulfils an important role as a vocational training centre for Zanzibar farmers. The demand for extension workers greatly exceeds KATI's annual throughput of certificate and diploma holders. An increase in the number of extension workers, and a possible renewal of extension methodologies, will depend on strengthening KATI's facilities and staff. The suggestion that the State University of Zanzibar (SUZA) extends its capabilities by introducing a School of Agriculture is a welcome initiative but should not infringe on KATI's massive current challenge to provide Zanzibar agriculture with much wanted extension staff at non-university level. A strengthened KATI will, however, over a 5 year partner, become a worthy training partner for SUZA in either a looser or more integrated model.

This report is meant as input to a strategic plan to be developed by KATI and its owner, the Ministry of Agriculture and Natural Resources, for its development over the next 5-10 years.

1. BACKGROUND TO THIS STUDY

Kizimbani Agricultural Training Institute (KATI) is a tertiary training institution which was established in 2007. KATI's roots go back to the Farmers Training Centre (1988) and the Farmers Training Institute (1998). It is the only one of its kind in Zanzibar. It is recognized by the National Council for Technical Education (NACTE) on 30 May 2011 to offer certificates and ordinary diplomas at levels 4-6 in the national tertiary education system, and is currently completing its formal accreditation procedures. In a NACTE accreditation there are also openings for introducing tertiary education at bachelor level (independently of a university). KATI was a necessary tool to improve the quality of agricultural knowledge among Zanzibar farmers through creating a cadre of extension officers to offer outreach and advice to farmers and others in the agricultural industries, and to young progressive farmers. Agriculture remains of crucial importance to the Zanzibar economy, both in its contribution to food self-sufficiency on the islands, to exports to the Tanzanian mainland, for import substitution and for global exports of specialized commodities (e.g. spices, coconut). It is estimated that up to 70%¹ of the population of Zanzibar are directly or indirectly connected to agricultural production, making farming (40% of the work-active population²) together with tourism the largest sector of employment. Arguably it also embodies many of the economically poorest sections of the community. Global production and trade developments also represent a challenge to Zanzibar's somewhat specialized agriculture and limited value-added enterprises and vertical integration. With about half of Zanzibar's food³ currently being imported, price fluctuations in external markets (incl. petroleum products) directly influence farm gate prices in Zanzibar. With the foreign tourist industry come additional challenges with high food quality and sanitary requirements and reliability of supply in a local market without well-functioning farmer marketing chains.

A rapidly growing population, with many young people, adds pressure on food production but also in the employment sector. Low farm incomes and limited access to arable land discourage youngsters from staying on in the countryside. Rural to urban migration of the young, to towns that can offer few employment possibilities, is gradually building up social challenges of significant order, including alcoholism, drug abuse, unwanted pregnancies, and petty and more serious crime. Without the generation of many new urban jobs (a common feature of growing African economies) a necessary alternative may be to ensure adequate and meaningful job opportunities in agriculture. With a relatively low self-sufficiency in food, and possibilities of producing more for the tourist industry, the agricultural countryside, together with peri-urban farming (horticulture, fruits) could be seen as a most important social (and ultimately political) tool for improving the rural welfare to keep the young in the countryside.

¹ As it was not the task of this consultant to do a more comprehensive review of the economy of Zanzibar, this figure, and some others mentioned in the text, are based on secondary sources and must be considered as approximate.

² See footnote 1. There have been newspaper reports in Zanzibar of a WHO study finding that 40% of Zanzibar's children are stunted.

³ See footnote 1

Although exact figures are lacking, informal reports suggest that Zanzibar may have a shortage of at least 1 200 agricultural extension officers to achieve reasonable coverage of all farming communities. One well-informed indigenous NGO put the figure at 2 500.⁴ Yearly about 100 students complete their studies at KATI. As not all of them go into agriculture or extension, the current annual contingent of new extension officers falls much short of demand. Incidentally, no one interviewed as part of this study was able to give estimates of the number of graduates (B.Sc. and M.Sc.) in agricultural science required in the short or longer term in Zanzibar. It would seem a challenge for the ministries of Agriculture and of Education to provide such numbers as part of any university planning process.

It should be noted, however, that these numbers reflect a particular approach to outreach services and is the current official approach in Zanzibar. Alternative approaches are particularly represented by participatory methods. The number of well-trained extension staff required to implement a variety of participatory methods may be different from the current extension policies, and in some cases be lower. Zanzibar does not seem to have conducted a thorough review of the methods to be used, and it is suggested that this be done, also independently of actual numbers of extension officers required. The real criterion should be the efficiency of the services.

Only to a minor extent did Zanzibar receive trained extension officers from the Tanzanian mainland agricultural training institutions in the decades prior to 2007. Most originated from Zanzibar. KATI was therefore designed to fill a real need in the technical educational system in Zanzibar, and to provide essential support services for the particular primary industries there. With a current enrolment of 210 students (126 female, 84 male) for the academic year 2012/2013 KATI has responded strongly to the expectations of both Government, the commercial sector and of the farming community to provide competency in important agricultural sectors. The relative gender balance of the students also supports practical conduct of extension services, in a sector where women farmers are in the majority, and cultural sensitivities exist. However, it must be appreciated that KATI can only accept a small proportion of new students every year, now about 100 but lower in previous years. The number of applicants has in recent years reached 600-700, of whom 200-400 are formally qualified. There are suggestions that the number of applicants for next year may be of the order of 1 000 (on the basis of application forms distributed). Thus the demand for KATI education greatly outstrips KATI's ability to supply, even to formally qualified applicants. Some of the academic staff of KATI are graduates of Tanzanian mainland institutions, including Sokoine University of Agriculture (SUA) in Morogoro and University of Dar es Salaam (UDSM) and other mainland universities and university colleges. Some have had their academic training in more distant lands. This has in fact given KATI access to a wide international experience on approaches to agricultural extension. This is a clear strength in the academic staff composition.

⁴ See footnote 1. The origins of the number 1 200 is allegedly the Ministry of Agriculture.

The current President of Zanzibar clearly views agriculture as a potential engine of growth for the country. This is somewhat exceptional – many senior African politicians have over many years neglected the agricultural sector in their priorities for national development. The relative success of KATI over this quite short period of existence appears to have encouraged the Zanzibar Government to consider strengthening the State University of Zanzibar (SUZA) with a School of Agriculture to support the emphasis on agriculture. It is natural – to some self-evident - that the largest economic activity in Zanzibar must also be supported by local expertise at university level. The Government may feel that the somewhat specialized nature of Zanzibar agriculture and its socio-political setting may arguably require a more specialized unit of agricultural science locally than found in other universities, including SUA on the Tanzanian mainland. There may also be logistic and political challenges involved in such planning considerations. Consequently SUZA (represented by the Vice Chancellor) and KATI (represented by the Principal Secretary, Ministry of Agriculture and Natural Resources) signed on 13 Sept 2012 and 10 Oct 2012 (respectively) a memorandum of understanding strengthening the ties between SUZA and KATI, specifically by SUZA offering academic support to KATI. However, the Memorandum is in general terms with no specific dates for implementation of the general intentions but the Memorandum is initially valid for 5 years (to *ultimo* 2017).

With such a request from the Zanzibar government to expand and deepen agricultural education KATI faces several challenges, to which there are no simple solutions but certainly alternatives that must be explored. Briefly, and with reference to the Terms of Reference (ToR) to this study, these are some of the main questions that must be answered:

- a) Shall KATI on its own strive for a future accreditation with NACTE to – in addition to certificate and diploma courses – also deliver its own bachelor courses and degrees independently of SUZA?
- b) Shall KATI be expected to continue its training of certificate and diploma holders (at levels 4-6) if it becomes affiliated or integrated with SUZA?
- c) If NO, should another institution be expected to fill this function? Which?
- d) If YES, how can KATI continue to improve its educational profile and training facilities for level 4-6 candidates concurrently with extending its capabilities to support university graduate education either at KATI itself (if the NACTE accreditation also for bachelor courses at KATI is forthcoming) or SUZA (which already holds such accreditations) and possibly undertake research and experimentation activities to underpin university teaching requirements?
- e) The facilities and staff of KATI have been developed and selected for offering training at levels 4-6. An upgrade to delivering bachelor courses at KATI in the future requires major investments in both facilities and competency of staff at several levels compared to the current situation at KATI as a certificate and diploma-awarding institution. If KATI is asked itself to contribute here, this can only be achieved by developing KATI's current own facilities and staff, or to build new facilities and select new staff.
- f) A School of Agriculture at SUZA essentially starts from scratch as there are very few agricultural scientists, or scientists in closely related fields, currently on the teaching and

research staff of SUZA. Although some current KATI staff have university backgrounds adequate for fully-fledged university level teaching and research, the argument in pt. e) (above) also applies with SUZA.

g) Incoming students to a School of Agriculture at SUZA offering bachelor and/or master degree courses must be expected to have the required level of academic talent and motivation for university education. This level is likely to be different (meaning: higher) than among the more mixed current student body at KATI. Here the ambitions are to get a certificate or a diploma. Whilst some may wish to go on to university courses leading to Bachelor and higher level courses, the initial recruitment is arguably at lower level.

h) Paramount to both KATI and SUZA must be that the standards of training and education must be at high national and regional levels and that they be supported by standards of research commensurate with such levels. However, during the first 5-10 years of existence of a renewed KATI or an agricultural science facility at SUZA it is not realistic to expect levels of excellence attained over decades by well-established institutions. Instead KATI and SUZA developments should aim at high relevance for the agricultural community in Zanzibar as it strives towards improved and increased sustainable production and alleviation of poverty for rural populations. In this way the aspirations of leading politicians can gradually and realistically be fulfilled.

There is an additional phenomenon worth considering, although not normally spoken much about:

A student obtaining a certificate, diploma or university degree normally is free after graduation to enter the job market at own free will. For some studies abroad a bonding mechanism may exist tying the graduate to a specific sector for a number of years without freedom to move to another field, or pay a stiff repayment to go elsewhere. The general impression of students leaving with an agriculture degree from SUA is that many do not enter the agricultural arena. Whilst it is not a great “brain drain” to other countries at B.Sc. or M.Sc. level, there is a relatively small proportion of graduates that remain within the general field of agriculture in Tanzania (a rough estimate is less than half⁵ five years after graduation). For certificate and diploma students a significantly larger proportion appears to remain in agriculture after 5 years of completing studies. Information from KATI staff seems to indicate about 2/3 remain within agriculture and therefore are of direct support to the farm economy. The somewhat unfortunate tendency seems to be that the more investment you make in agriculture degree students in Tanzania the greater the probability that they will leave agriculture.⁶

When considering the extension of agricultural education to university level in Zanzibar it may seem relevant to briefly review previous efforts to upgrade agricultural education in East Africa, including the Tanzanian mainland.

⁵ See footnote 1. Information gained during an earlier study for a 5 year strategic plan for SUA.

⁶ That is of course a direct loss to the agricultural sector but a gain for other sectors, including the possibility that an agricultural graduate in a different field will indirectly help agriculture in other types of decisions he or she may make in the new field. So it may be a loss to the sector but not to the nation.

Originally what is now Sokoine University of Agriculture in Morogoro, Tanzania, was an extended college arm of the University of Dar es Salaam. When it became upgraded to independent university status it was in the knowledge that mainland Tanzania already had a considerable number of training institutes in various fields of the agriculture and forestry sciences that would continue to produce certificate and diploma holders. An independent agricultural university would therefore not engulf the training institutes but create a higher level in the educational pyramid on which the institutes could draw. That the University of Dar es Salaam lost its agricultural science arm was not considered a *de facto* loss as Sokoine had always been in Morogoro.

In Kenya Egerton College had traditionally had a central role in educating agriculturalists at levels below university degrees. With the reorganization of the university system in East Africa (with the undoing of the umbrella of “The University of East Africa” inherited from colonial times) Egerton was designated also to be an institution at university level in 1987 (Egerton University), and significantly strengthened to cover the whole range of certificate, diploma and university degree courses. But Egerton was not the sole provider of certificate and diploma training in agriculture and forestry in Kenya. Indeed, there were a fair number of training institutes there that continued to offer certificate and diploma courses. But Egerton is an example of a lower level institution that expanded into a fully-fledged university whilst maintaining its more basic functions.

Makere in Kampala, Uganda, was the main agricultural university college in East Africa, and had attained a high international reputation in tropical agriculture and forestry.⁷ Its transformation to an independent university with the dissolution of the University of East Africa was relatively easy – it already had attained high university level in its education and research in many fields, also outside agriculture and forestry. Its existence was underpinned by a number of agricultural training institutes at certificate and diploma level scattered throughout the various agro-ecological zones of Uganda, institutes that have by and large been maintained also after the establishment of the fully independent Makerere University.

In this context it should be noted that mainland Tanzania, Kenya and Uganda are all regions and countries of large and varied agro-ecological zones and with high populations numbers compared to Zanzibar. Zanzibar is a special case and direct comparisons with other regions of East Africa must be seen in that light.

⁷ Together with The University of the West Indies in Trinidad it was arguably one of the best agricultural universities in the tropical world during the middle of the 20th century.

2. KATI TODAY: STRENGTHS AND WEAKNESSES AS A CERTIFICATE AND DIPLOMA TRAINING INSTITUTE IN AGRICULTURE

KATI's physical facilities currently serve 210 students, all boarders. It is understandable that in a region such as Zanzibar with a major gap between demand and supply of trained agricultural personnel, great effort is made to utilize the existing KATI facilities to the maximum. This is laudable but there is clearly a balancing point between optimal physical utilization of facilities, and the individual comfort zones of students and staff. In addition perceptions of what institutional comfort should include vary both between and within student and staff groups. It would be relevant to compare the facilities to national standards at tertiary levels for certificate and diploma studies. This reviewer has not had an opportunity to inspect such training institutions in other subjects in Zanzibar. Comments may therefore have to be of a general nature.

Lecture halls are crowded. Classes are divided into two groups and lectured at different times. Even at a student population of 210 (as per today), a conservative estimate of this reviewer is that the lecture hall/teaching room capacity needs to be at least doubled, with various types of halls and smaller rooms.

Laboratories are currently not operational but with the completion of the actual infrastructure the animal science laboratory equipment currently in store will soon make this laboratory operation.

An early expectation in an agricultural training institute should be to have a large general biology laboratory, in addition to the specialized animal science laboratory. Separate laboratories for chemistry, physics and specialized subjects seem less relevant. Although veterinary medicine is important in Zanzibar agriculture today, it is probably wise to use visits to outside institutions to receive insight into veterinarian aspects, rather than to embark on expansions in this direction at KATI. Modern developments also require a computer/telecommunication and media laboratory, not present today. Agricultural extension is developing and KATI should develop with it. As KATI increasingly stresses value-additions in agriculture, general facilities for food processing and packaging for sale to an increasingly quality conscious consumer group (including quality-oriented hotels and restaurants) seem vital, with particular emphasis on the expanding dairy market.

Library facilities are covered in a separate study by Noragric Librarian Liv Ellingsen. In order to benefit from free publications from the UN and CGIAR system centres, both in paper form and through online services, and other (mostly free) online journals and general library services an adequate electricity supply and availability of computers and accessories are central (see 2.1. below). Not to preclude any conclusions that Noragric's Liv Ellingsen may make, I have noted a wish from library personnel for more specific training, more space and more computers (with associated training)

Farm machinery equipment and farm management. Agricultural engineering is taught as part of KATI courses. But KATI does not have a tractor or a milking machine, an operational irrigation system or any significant collection of farm equipment. Not only is this a serious educational flaw, but it is also a bottleneck for efficient utilization of the current KATI farm area. It will become critical if the farming area is expanded (as is currently being explored as title deed issues are being formalized to give KATI more land). However, with the current

weaknesses in agricultural machinery KATI does not maintain even its current land at optimal production levels. Visits to external tractor repair shops and similar cannot substitute for hands-on teaching at institute level. KATI should acquire significant agricultural machinery components even with its current farm size, for educational purposes and to prepare students for a future (they may have a career of 30-40 years ahead of them) where farm mechanization will become more important in Zanzibar agriculture. A visit to a progressive family-operated horticultural farm in peri-urban environment near Zanzibar Town illustrated how even an advanced drip irrigation system can be installed and financially successfully operated in Zanzibar today. KATI should not lag behind in its training.

In this context the composition of animal herds and flocks need to be considered. It is outside of this reviewer's terms of reference to review breeding and husbandry methods and the species chosen. It would be of high value to KATI's students and KATI's reputation that it becomes known as a centre of excellence for animal production. A specialization in one or few species may be warranted, as KATI currently seems to have cattle, goats, poultry and rabbits on campus. KATI's interests in goat breeding and goat rearing may be particularly relevant. The move towards the inclusion of better milk genes in the local goat population, combined with goat milk processing facilities, may point the way.⁸

The fields available for animal grazing do not seem to be in optimal condition, and could probably benefit from being converted from permanent pasture to a ley system with (long term) periodic ploughing and reseeding with more productive grass species, and including legumes. The routine tethering of some cattle can be avoided if adequate fencing is available. These factors will be particularly important if KATI's income is to be supplemented from own farm sales.

Animal welfare standards were not available for serious inspection. KATI would have particular obligation to ensure the implementation of best practices, to set a good example for the students. The present animal shed facilities are probably adequate for the time being.

General facilities. The quality of the electricity supply is reported to be moderate, with occasional black-outs and brown-outs (insufficient voltage). Ideally adequate own generating capacity should be present on the KATI site, with priorities given to water supply systems, dormitory and staff house lighting, and ventilation of animal areas when required. Farm machinery operated on electricity (e.g. future milking machines and milk processing equipment) will require stand-by generator capabilities to for (near) continuous power supply. Computer and telecommunication systems should ideally be well protected both against power cuts and fluctuating quality of supply (especially spikes). There seems to be a shortage of UPS's currently – the first line of defence in a computer and telecommunication setup is not optimal. Not only do computers need to be protected but other sensitive equipment will also benefit from having UPSs attached.

The water supply is secured from outside sources, and the construction of an on-site source of water seems unsuccessful. There have been many reports to this reviewer of inadequate water supplies, both in terms of quantity and quality. There are general human health concerns voiced as general cleanliness is affected. Whatever the history is of the efforts of KATI to secure adequate and safe water supplies, the result falls short of expectations. The risks of disease outbreaks, particularly among students but also affecting animal herds, are real.

⁸ Support for this may usefully be had with cooperation with the Norwegian agricultural training institute Sogn Jordbruks- og Hagebruksskule in Aurland in Sogn. Appendix 2 summarizes some discussions.

The standards of KATI roads have been questioned. Whilst it is true that internal farm roads may be rough (as seen during the rainy season), the main access road appears in adequate condition even during the rains, and with careful grading after the rains, should be serving the institute adequately.

Of the student facilities dormitories have been pointed out as overcrowded and presenting sanitary challenges. Like in many such housing arrangements there is an inherent danger of epidemics. Expectations of comfort for borders vary throughout the student group currently at KATI, where backgrounds, behaviour and also age differ significantly. It would be a good selling point for KATI for attracting good students to have good student facilities (also important when parents may come to visit). At present dormitories both for men and women are inadequate and probably have half the capacity of what they need to have to be considered “good”. Up to 12 male students are housed in one room in a dormitory and 8 female students in one of theirs, and in bunk beds. On inspection toilets and showers seemed functional. Building plans for a new women’s dormitory should be executed speedily, and quickly completed, and further plans for dormitory expansion be considered.

A particular concern may be expressed about the main student catering facilities. These are very rudimentary and without adequate standards of cleanliness for catering staff and students. There is little doubt that a food and drink related epidemic could easily develop, but staff must be recognized for their ability to do a lot with little. The construction of a small biogas plant to replace cooking by firewood will improve air quality in the catering area, in addition to representing an interesting innovation. Student menus are always popular topics of discussion, on which this reviewer holds no opinions except relaying student reports of “much rice and beans”. There seems to be a concern among some students about the lack of a balanced diet to reflect standard nutritional recommendations.

Unlike in many other technical institutes KATI – partly because of its more remote rural setting compared to urban institutions – now provide food for the students against a fixed food fee. An alternative could be to remove this fee, invite a commercial catering company onto the campus to use the basic catering facilities, and let the students choose from their menus.

Linked to student facilities are medical facilities for the students. Concern has been voiced to this reviewer about inadequate first aid facilities and sick bays on the KATI campus, and in particular the difficulties in finding adequate transport facilities at night to take sick students to hospitals or other outside medical attention. The availability of a KATI vehicle and driver in a standby function for night-time medical emergencies could ease these concerns.

This reviewer have received no concern over recreational and sports facilities, which – on inspection of the combined soccer/volleyball and netball field – seemed marginal.

In relation to staff housing it is understood that most staff live off-campus. One staff house has been converted for student use.

KATI’s human resources

KATI’s academic staff currently consists of 25 permanent members, 3 with Master’s degrees, 11 with Bachelor degrees (4 are women), and 11 with diplomas, as highest level of formal education⁹. In addition KATI employs 12 academic staff in part-time positions.¹⁰ Many have

⁹ See Appendix 3 for a further explanation of staff composition, as provided by KATI.

⁹ See Appendix 4 for a list provided by KATI

attended additional short-term courses and training at institutions within Tanzania, East Africa and beyond. Several of the university graduates have relevant degrees from well-recognized universities of international repute. Staff report that they are fully occupied during the daily instruction periods and have little time for (part-time) additional employment (as they witness in other comparable institutions). The staff complement for current KATI activities seems reasonably adequate, both in terms of level and academic relevance. But there is concern about the lack of a land use/soil science specialist on the staff, as well as someone competent in natural resources management. Such expertise currently has to be sought on a more *ad hoc* basis, e.g. from the Zanzibar Agricultural Research Institute (ZARI). As all staff appear to be Zanzibari it is a strength that they have sought their earlier training in so many different institutions worldwide. Several of the more senior staff members have previously held posts in the Ministry of Agriculture for more administrative tasks and may be due for academic updates (e.g. short-term courses) at relevant institutions in Tanzania or further afield. Some of the younger academic staff have aspirations for further degrees to face future career challenges. This is also so for some senior staff members with fewer service years in sight but with keen intellectual interests. Opportunities available for additional courses and degrees for KATI staff offered by inside or outside sources should be actively pursued. Potential cooperating partners and donors should be made aware of the need to update staff, also as part of joint projects. When staff are granted study leave for longer periods issues of gap filling will arise. Thus in the plans for study leaves a component and costs of temporary replacements must be included.

Academic staff members have raised the issue of generally lower salaries within this institute compared to training institutes governed by ministries other than Agriculture. It is outside the scope of this reviewer's terms of reference to evaluate salary and benefit conditions for KATI staff. If – as alleged – the general level in this training institute is lower than elsewhere, it may be difficult in the long run to attract and retain good staff members. The Council of KATI is well aware of this but it is beyond its powers to change government regulation. A request to the Public Service Commission submitted in 2011 by KATI may be reviewed by the Commission in May/June 2013. It may lead to reviews of salaries and benefits. KATI appears to have a well-functioning senior management, with wide scope of current challenges and opportunities, and with a good network among influential people. With further improvements of KATI's operations, and possible expansion, the administrative challenges will significantly increase and will require a senior administrator of highest calibre to supplement the well-functioning director.

Whilst unable to assess the functioning of the KATI Council as no Council meeting took place during the visit of the reviewer, a meeting with the Chair gave convincing evidence of awareness of the national role of KATI and the socio-political environment in which it operates. Experience has shown that councils (or boards) can be very important at times of increasing challenges to the institution. KATI management has an important task in engaging the Council in KATI affairs, with well-prepared Council papers, good Council discussions giving management clear guidelines, and to expect them to carry the KATI message to outside interests.

General support staff

A separate study of KATI library staff requirements is being carried out by Noragric's Liv Ellingsen and is not further considered here. From Noragric reports¹¹ it appears that improvement of library staff and facilities are in hand.

Computer support staff constitute increasingly important members of an agricultural training institute. KATI seems short of one experienced ICT person, who also can ensure that networks are operating satisfactorily.

Staff with duties related to dormitories and catering seem to be carrying out their work adequately within the facilities and resources made available to them.

Farm staff issues were not thoroughly discussed. The state of the fields in the middle of the long rains offers few clues to longer term grassland management. There was considerable poaching of the ground at the entry to the (hand) milking parlour but this is common on many dairy farms and need not be of concern. The growing of many different crops on the farm is a major challenge to farm staff, and will increasingly become so if production – also for sale – is intensified. There is a need for more demonstration plots and simple field experimentation to give strength to practical aspects of student training. Whether the current farm staff is up to such expansion may be in doubt. Animals seemed in adequate shape. It is often difficult to assess animal productivity from external evaluation of the animals, particularly in zebu x exotic crosses in cattle and local x exotic crosses (including Norwegian dairy goats) in goats. Good breeding strategies are important and KATI should ensure that it has access to such expertise. Good KATI herds are good KATI public relations.

General maintenance staff appear to keep the facilities in reasonable shape.

For all staff: Female staff with small children would dearly like the existence of a crèche on the KATI campus, so that they can attend to their children and breastfeed them if required during the working day, without significant loss of working hours. There were indications that they were willing to make smaller financial contributions to such an arrangement.

KATI's fields of study and curricula

Some general thoughts

KATI has invested much in developing and maintaining relevant curricula for its certificate and diploma studies. There is also a current prospectus with a detailed introduction to the institute. This prospectus should at the present time be taken as given, and it is under continuous review by the KATI leadership. There is a recurring weakness in its teaching methods in that topics that ideally be available for field demonstrations and hands-on activities are only taught in a more theoretical context. Whilst it is true that many of the students have practical agricultural background and may easily see the practical and field implications of topics taught, *seeing is believing*. There should be general instructions to the teaching staff to aim for practicals to be included in their courses and to a larger extent than at the moment. This is what gives certificate and diploma courses the greater relevance to practical farming than university studies for B.Sc. and M.Sc. students, and is of greater relevance to future extension officers.

¹¹ Ellingsen, Liv (2012), Noragric.

Outside sources interviewed in the context of this study have repeatedly stressed that the challenge to KATI is not only to increase the productivity of agriculture in Zanzibar but to look seriously at the marketing of local produce in order to assist farmers – alone or in cooperation with others in groups – to sell their produce at the best farm-gate prices obtainable. KATI may consider strengthening this aspect further in its curricula, in support of future agricultural marketing by groups of farmers but also in the context of farmers' self-employment.

There are a number of factors of the current agricultural scene in Zanzibar that need to be reflected in the curricula for extension workers of the future to form valuable guidelines for farmers now and in the near future.

Productivity: more produce

Zanzibar imports about half of its food needs, much of which in principle could be grown on the islands. Excluding roots and tubers the import figure is somewhat higher. With limited agricultural areas available (and not wanting to expand the arable area at the expense of forests and nature reserves) a careful analysis of needs to be done on which crops and livestock to produce in Zanzibar and which to import. Advice to farmers should reflect such an analysis and the teaching at KATI should reflect this. Whilst farmers may wish to ensure family food security by cultivating efficiently some rice, maize and cassava, these are commodities with low value per unit area of crop land. That the grains, together with grains less suited to Zanzibar conditions (wheat, barley) remain largely imported and that the arable land is alternatively used for higher value crops, make sense. KATI's courses may need to make this point.

To increase productivity of high value crops may require more knowledge on the value of biological fertilizers, incl. animal manure and compost, and – when appropriate - the application of chemical fertilizers, insecticides and pesticides. When the latter are used, farmer safety measures are critically important both during application and storage. These are factors to be considered in courses, and also biological control agents, e.g. neem extracts, known from organic agriculture. Safety first, both for farmer, her/his family and the consumer is of paramount importance.

Better quality

Critical customers require quality. The tourism industry of Zanzibar offers a market for high quality crops and animal produce. Having found itself locally unable to attract adequate quantities and steady supplies of the high-quality produce, large parts of the tourist industry catering for foreign visitors now import food from the mainland or further afield. This is a missed opportunity for Zanzibar farmers. Whilst it is outside the scope of KATI courses to try to make arrangements between the hoteliers and the Zanzibar farmers, concerted efforts to ensure fresh produce of high quality and ideally with extended seasons (irrigation) can open up otherwise unavailable markets for local farmers. If KATI courses could teach and demonstrate the routes to high quality crops, and livestock products, this may be of direct help for extension officers attempting to guide farmers into more lucrative production systems.

Value addition

Many farmers have the ability to alone or in groups to add value to their basic products. Milk is an obvious example, where yogurt, butter making and cheese making can increase the value of the liquid milk 3-4 times and provide additional employment. Even improved presentation,

e.g. packaging of basic products, increases their value in a choosy market. Ability to analyse the market for value-added products should be taught at KATI, and maybe a basic ability to analyse markets where commodity prices and their fluctuations are known. Adulteration of milk (up to 50% with unsafe water) seems to be a common “value-added practice” that must be frowned upon by the authorities.

Niche products

Zanzibar has long exploited the spice market with brands of the *Spice Island*. Facing increased competition in the world market from other foreign producers, branding is increasingly important. Farmers and groups of farmers may be encouraged to develop brand names for niche products. Other labels that increase the value of produce are “certified organic” and “fair trade”. International certification systems exist to obtain such labels. KATI should acquaint itself with such system to enable extension workers to advise farmers in search of niche markets for niche products. Intimate knowledge of the certification procedures may require KATI teaching to accommodate such knowledge in its courses.

Outreach of new ideas to farmers

There need not be much doubt of KATI awareness in these and other fields of increasing quantity and quality of agricultural produce and products. Everyday life is changing for Zanzibar farmers as they become incorporated in a new media world. The mobile phone is everywhere, the smartphones will be coming soon, and “iPad”-technology is becoming more commonplace. Bank transfers can be done from mobile phones. Television and internet services increasingly open up farmsteads or community houses to new sources of information. KATI students must be in the forefront of knowledge of such media developments, to ensure that the most important economic industry in Zanzibar (agriculture) is not left behind and becomes yet again marginalized in the general development of Zanzibar society. As KATI modifies its curricula over the next period to prepare its students even better for the real world out there now (or about to come), media knowledge will become central, also at it supplements the more traditional extension methods. Of great importance is also to distil into KATI students a critical sense of information quality. Accustomed to quality-controlled textbooks, booklets issued by reputable organizations and refereed articles in scientific journals, KATI students must realize that the new media is a true jungle largely without quality control, and certainly without quality control relevant to conditions on Zanzibar. There is globally a strong tendency for students to believe things “they have seen on the internet” or “read on Facebook”. A sober approach to the new media is very important. It may in the future also be important for KATI as an institution to have installed anti-plagiarism software for examiners of student papers to ensure that student contributions, which may in the future become part-electronic, are originals and not just uncritical copies of something from the internet, whether good or bad.

3. KATI IN THE FUTURE

The need for KATI services is beyond dispute. The reported shortage of at least 1 200 agricultural extension officers in Zanzibar, and possibly as many as 2 500, represents a huge unfulfilled demand. The need for increased productivity of Zanzibar agriculture and increased ability to sell higher-quality produce into the national and international markets are of paramount importance to the wellbeing of Zanzibar population and its aspiration to alleviate poverty, which is particularly severe in the farming population and in the countryside.

It therefore follows directly that the only institution in Zanzibar producing agricultural extension officers (KATI) should be enabled to increase its supply of certificate and diploma holders significantly, from its current output of about 100 per year. The current output of 100 is also optimistic in the sense that maybe 1/3 of students later go into other professions than agricultural extension¹². 60-70 new entries into extension are probably not much more than the replacement requirements of outgoing extension staff. It will therefore take a very long time to increase the absolute strength of the Zanzibar agricultural extension services if the supply from KATI is not significantly increased. In the interviews this reviewer has had with progressive farmers in Zanzibar the message is crystal clear: *We need more knowledge*. At farm level it is the extension officer who is the main conveyor of existing and new knowledge. Also from other sources on the agricultural demand side, e.g. representatives serving the tourism industry, there is a similar message: *Farmers must improve their quality standards, extend the harvesting seasons, and package their produce so as to be attractive to the modern consumer (often the visiting tourist)*.

A realistic figure for the annual net supply of KATI certificate and diploma holders depends on the actual demand figure, plus the need for annual replacements of outgoing extension staff, and the period required to reach the conservative (?) figure of 1 200 new extension workers. A rough calculation, but with uncertainties as this reviewed does not have access to detailed statistics¹³, would indicate that if KATI doubled its annual output to 200 (of whom 150 would be expected to go into extension) balance may tentatively be reached within a 10 year period.

There seem to be no immediate limitations to the supply of qualified candidates to KATI courses. With the current intake at least the double of qualified candidates are identified in the selection procedure, and an intake of 200 students per year would not represent a lowering of standards.

The conclusion of the needs analysis. Although rudimentary in its methodology, and certainly inviting a more stringent analysis from statistical data that may (or may not) be available from official sources, the arguments above point to:

Increasing the supply of certificate and diploma holders in agricultural extension from 100 to 200 at earliest stage. This expansion should be started soonest and have a 10-year scope.

This is probably the single-most important knowledge support that the Government of Zanzibar can give its farmers. The ratio between certificate and diploma holders will need to be analysed in more detail. An increase in certificate education (1 year courses) will allow the final figure to be reached more quickly than if focussing on the 2-year diploma course. On the other hand this may be less attractive to talented school leavers and lower the standards of KATI in the longer term. The current ratio at KATI may be a good compromise.

How to institutionalize the increase in extension officers

KATI facilities are fully extended to cope with the current student intake. There is very limited scope in increasing the number of students on campus. A growth in the training

¹² It is important to note that those who leave agricultural extension are not «lost» for Zanzibar. They are taking the skills acquired at KATI to other fields, more or less related to agriculture, and that may be valuable also. But they do not go into extension, which is the issue here.

¹³ See footnote 1

capability can only come through expansion of the current infrastructure facilities (where are a multitude of “first limiting factors”) and staff, or by opening a new campus to twin KATI at certificate and diploma levels. There is no such institute on the horizon for these levels.

There are institutions at both ends of the educational spectrum that could have duties in relation to agricultural training. People interviewed have suggested that practical farming should be better covered than it is now in primary school (Standards 1-8) so that more general farming knowledge is also distilled into children who may never receive further formal education. This is an important point worthy of consideration of the Ministry of Education. At the other end the university (SUZA) may have ambitions to include agriculture, or a school of agriculture, in its curricula and research activities. Whilst it is truly laudable that a newly established (10 years ago) state university considers agriculture as a subject (one would wish many other universities in the world thought likewise!), it is arguably the wrong end for a university to start with certificate and diploma students, and not B.Sc./M.Sc./PhD.-students and the associated research activities normally associated with an institution at university level. SUZA does not have significant capability in research, academic staff or facilities to contribute to the expansion of agricultural extension officer training at the present time. The supply of future B.Sc. and M.Sc. graduates from SUZA (probably beginning 3-5 years from now) will not address the extension officer challenge, and therefore not substitute for the market demands for certificate and diploma holders even at this later stage.

A closer association of KATI and SUZA ? A short to medium term view (less than 5 years

Ten-year old SUZA has in recent years also expanded by acquiring teaching and training institutions that were previously independent, and often operating at below-university level. Health personnel (nurses) and teachers are examples of recent developments in this direction¹⁴. It has not been in the terms of reference of this study to evaluate the challenges and successes of these acquisitions in the short and longer terms. But it is fair to say that concerns have been voiced to this reviewer about these mergers, both from the continuity of adequate training at lower levels and the suitability of staff and students at the training institutes for the higher requirements inherent in university-level teaching and research. SUZA’s vision is “to be the preferred higher institution of learning and research in East Africa”¹⁵

Political signals from the Office of the President of Zanzibar, and arising from the Strategic Plan of SUZA, voice the possibility that KATI be acquired by SUZA to be a starting point for a future School of Agriculture in SUZA¹⁶. The Memorandum of understanding between SUZI at the Ministry of Agriculture and Natural Resources (on behalf of KATI) of 2012 is a proof of this. Firstly, it must be repeated that it is a most welcome sign in Zanzibar Government policy that agricultural (and related) science(s) is given such a prominent position in the tertiary education system.

Secondly, it must be realized that a university needs applications from candidates of highest calibre and talent, has teaching staff of university standards, research facilities and programs commensurate with a good university, and generally facilities of good university standards. With all due respect to KATI none of the above apply fully to present-day KATI. It accepts students with O-level secondary education (although many of them may be inherently well

¹⁴ See: Rolling strategic plan of the State University of Zanzibar for the years 2012/13 to 2016/17. Manuscript kindly made available by the Vice-Chancellor’s Office, SUZA. See e.g. section 3.2.

¹⁵ Ibid. Executive Summary p. 2.

¹⁶ Ibid, sections 1.4 and 3.2.1.

talented and motivated), it has an academic staff tailor-made for teaching at certificate and diploma level (although several of the staff would surely be capable of getting higher degrees than what they now have given the opportunity), it has virtually no research facilities (except land) nor programs or research culture¹⁷. As will have become evident from earlier discussions KATI does not in any way currently have facilities of university standards.

It would therefore not be advisable for SUZA to acquire KATI in the short or medium term as a foundation block for its new School of Agriculture.

KATI is what the name says: An agricultural training institute, originating as a farmers training school. Under the Ministry of Agriculture and Natural Resources. It is quite good at what it is doing, it needs to do more of the same, but it does not at this time fall naturally into the bracket of becoming a main part of a university school under the Ministry of Education. SUZA should also do a market analysis on the need for university graduates in the Zanzibar agricultural market. This reviewer has not sensed any large demand for B.Sc. and M.Sc. degrees in agricultural science. Instead it has been voiced a fear that extra government funds spent on few university graduates will be diverted from the training of the much-needed agricultural extension officers, and that the graduates will not – in any large numbers – come to serve agriculture directly¹⁸. For agricultural extension services this may be a “loss-loss-situation”.

Some years ago the Zanzibar Agricultural Research Institute (ZARI) and KATI separated a close association. In the terms of reference of this reviewer ZARI is not included. Neither is ZARI included in the now much quoted SUZA strategic plan¹⁹. This reviewer has not sensed that it is a current wish of ZARI itself to be included. Seen from the outside, however, the research capabilities of ZARI are closer to the research profile SUZA wants to cultivate, also in its new School of Agriculture, than KATI's. For this current review, however, this appears to be a non-issue.

It is important that SUZA at this early stage does not see KATI (and ZARI) as immediate starting blocks for its planned School of Agriculture. It would be detrimental for Zanzibar agriculture.

At the same time it does not seem sensible for KATI in its attempts for future accreditation by NACTE to seek elevation to bachelor level on its own. The very same argument used in the context of SUZA will apply to KATI. Whilst this model may have worked well for e.g. Kenyan Egerton University, the smaller size of Zanzibar does not make it directly comparable.

A closer association of SUZA and KATI : a long term view (up to 10 years)

To be a real partner for a university KATI must be upgraded across the board but without being diverted from its primary task as a training institute at the current educational level (5-6). A larger number of KATI students should be trained. During the first 5 years or so, hopefully KATI will have come up to the desired level of students earning certificate or diplomas. This will also be a period when facilities will be expanded and improved. KATI

¹⁷ Quoting the reference in footnote 14: «Universities without research activities run the risk of becoming glorified secondary schools» (Association of African Universities/World Bank, 1997) p. 52.

¹⁸ Re: the situation with SUA graduates, footnote

¹⁹ See Section 1.6..

will then be better equipped to consider and be considered for a future close association with SUZA.

At that stage (but possibly starting before) selected KATI staff could be selected for future training: higher degrees at relevant universities in Tanzania, in the East Africa region or further afield. Financing, including overseas scholarships, should be actively sought to prepare staff to be considered in a university context. The upgrade of B.Sc. holders to M.Sc. seems immediately relevant. Ph.D. degrees are extremely costly and must be carefully evaluated against alternative investments.

But during this 5-10- year period KATI's traditional teaching must be continued, and be unaffected by staff improvement policies. This reviewer is aware that many senior staff of Sokoine University of Agriculture in Morogoro will be retiring during this period. Some may be available on pensioner terms for assisting KATI as its own staff are away to receive further university training. Other sources of temporary Kiswahili speaking teaching staff may be found in Kenya and Uganda. It also follows that staff at higher levels must be comfortable in teaching in English, the prime language in a future university setting.

Having expanded and consolidated its operations at certificate and diploma level during the first 5 years (2013-17), the preparation for closer KATI association with SUZA within a 10 year period (by 2023) could be contemplated.

The period from 2017 (or earlier) should include offers to selected staff to improve their university backgrounds through the acquiring of higher degrees, on scholarships provided by the Zanzibar Government, or external donors.

The longer term prospects of KATI (and ZARI) incorporated in SUZA would only work if SUZA guaranteed a long-term commitment to certificate and diploma courses, which are what Zanzibar primarily need. Concrete agreements between KATI's current owners (Ministry of Agriculture and Natural Resources) and SUZA should ensure this.

4. OTHER ISSUES (ToR PT. 3 REFERS)

4.1. AGRICULTURAL TRAINING INFORMATION AND DOCUMENTATION

A general review of extension practices to be followed by government institutions in Zanzibar seems overdue. There are suggestions that participatory methods may be introduced as a supplement to current advisory practices. If so, KATI will need to adjust its training information and documentation which is currently geared to more conventional approaches.

4.2. TEACHING AND LEARNING INFRASTRUCTURE AND FACILITIES

This issue has been discussed in detail in sections 2.1. (physical infrastructure) and 2.2. (human resources). In summary human resources seem adequate for about 200 students at this level. Physical facilities have significant room for improvement, details have been provided in section 2.1.

4.3. EXISTING HUMAN RESOURCES CAPACITIES

With an academic staff of about 25 at Master's, Bachelor's and Diploma levels, and 12 part-time academic staff, the institute seems reasonably served with the present teaching programmes (see Section 2.2.). If the number of students is greatly increased, then the staff complement also needs to increase. There is a general desire for staff with Bachelor and Diploma education to get an opportunity to upgrade their education. If opportunities exist it would be welcomed by staff. Gap filling may be required so not to overburden existing staff. Some suggestions for gap filling are outlined in Section 3.2. If an association with SUZA becomes relevant, then more staff will wish to receive additional education to fit more equitably into a university setting (see section 3.2.)

4.4. EXISTING MONITORING AND EVALUATION TOOLS

To support the development of a strategy KATI has constituted a Strategic Team. A similar construct may form a monitoring and evaluation committee, possibly chaired by an external member and reporting directly to the Council. A formalization of current systems seems advisable, particularly in setting concrete and measurable goals, to which KATI's management can be held accountable. See also footnote 19.

4.5. WORKING WITH STAKEHOLDERS, PARTNERS AND COLLABORATORS

KATI leadership seems well embedded in Zanzibar decision-making structures. Three groups may seem worth consulting further in the future: farmers' organization, tourist operators' organizations and the food processing industry. Food production is closely associated with human health and inputs from medical staff/nutritionists into courses seem worthwhile. KATI should maintain good connections locally with ZARI, as a source of new knowledge but also to give input on priority research topics of value to farmers. Sister institutes on the Tanzania mainland are obvious dialogue partners. With SUA Tanzania has an agricultural university of international standing from whom also KATI must benefit. Linking up to institutions abroad seems sensible, firstly to other Kiswahili-speaking countries (Kenya, Uganda) where relevant teaching material may be available (see section 3.5.). Link-ups with institutes abroad may be inspirational, and the tentative connections with Sogn Jordbruks- og Hagebruksskule in Norway is a promising start. The Norwegian University of Life Sciences have trained many Tanzanians at university level.

4.6. ONE YEAR ACTION AND MONITORING PLAN

When KATI has completed its strategic plan, to which this report is a contribution, a list of activities for the first year (and subsequent years) will appear. For its own purposes SUZA has developed a checklist for strategy implementation that would also seem suitable for KATI.²⁰ It is suggested that KATI forms a small monitoring and evaluation committee to record and evaluate progress (or otherwise) made (see section 4.4.). The results should be available for KATI Council discussions.

²⁰ See reference 14, p. 49, table 5.2.

4.7. POTENTIAL SOURCES FOR RESOURCE MOBILIZATION

KATI relies on grants from the Ministry of Agriculture and Natural Resources as its main source of income, in line with comparable institutions. A major expansion of KATI's work would require substantial increases in funding. There are a number of routes to be explored for resource mobilization:

- (A) Increased contributions from the government
- (B) Increased own-generated income: sale of produce from intensified farm production, with the possible expansion of land in 2014 should title deeds be solved
- (C) Renting out of facilities for short-term courses conducted by KATI or external bodies, at fair prices
- (D) Approaches to donor institutions for investments in buildings and equipment, stressing the role of smallholder agriculture for poverty alleviation approaches to donors to secure places of further university education for upgrading staff.
- (E) Increased student fees.

A and B depend on government decisions and political will. B will require good farming practices to deliver significant surpluses. KATI should be able to do this.

C: KATI already does this during vacation periods. Upgrades of facilities could attract more external users and generate income.

D: International donors have varying criteria for support to educational institutions and in particular agricultural training institutions. Some donors stress contributions to poverty alleviation (and improved agriculture is clearly an important factor for this). Other stress vocational training as increasingly important to get relevant and rapid results from development assistance. Some have special emphasis on university development, both of staff and institutions. KATI and its Ministry, as well as SUZA must enter into dialogue with potential donors to ascertain their respective development priorities. In general investment funds rather than operational funds attract donor interests.

E: KATI students come mainly from low-income groups. Although KATI fees may be only 50% of annual fees of comparable teaching institutions and the number of applications is high compared to available places for certificate and diploma students, it is likely that higher fees may exclude motivated candidates with (low income) agricultural backgrounds. The total gain for KATI would be moderate. Not recommended.

5. CONCLUSIONS

KATI fulfils a real need in Zanzibar agriculture, which is seriously short of competent advisory services. Whilst the output from KATI of candidates with accredited certificates and diplomas in agricultural extension needs to be increased, this is not easily done within the current physical facilities. Further investments in the facilities are urgently needed if the important technical and vocational training offered by KATI is to reach the mostly poor farmers.

The most urgent need now is thus for more agricultural extension officers, whilst the training of university graduates at B.Sc. and M.Sc. level will become more important in later years.

Such university training should preferably be within the framework of the Memorandum of Understanding between KATI's owners (Ministry of Agriculture and Natural Resources) and SUZA. For KATI to play a meaningful role as a building stone for a new School of Agriculture at SUZA, KATI staff will require further upgrading of their skills.

Any institutional rearrangement of the training of agricultural extension officers should respect, maintain and ultimately the production of certificate and diploma holders such as those obtaining their training at KATI today.

Zanzibar authorities, represented by KATI and its Ministry of Agriculture and Natural Resources, should revisit the alternative methodologies of agricultural extension, including possibly more emphasis on participatory methods, in order to make the work of existing and new extension officers more efficient and inspirational for the farmers.

APPENDIX 1

Terms of Reference for Developing a Strategic Plan for KATI

1. INTRODUCTION

The Revolutionary Government of Zanzibar through its development strategies and policies recommends the upgrading of Kizimbani Agricultural Training Institute (KATI) to enable to maximize its contribution to Agricultural development in Zanzibar and also upgrade so that it can be affiliated with the State University of Zanzibar (SUZA). The government intends to develop a strategic plan (SP) to provide guidance for effective delivery of agricultural training and support service to the Zanzibar community.

The Enhancing Pro-poor Innovation in Natural Resources and Agricultural Value Chain has set aside funds for financing the study that will enable to develop KATI strategic plan.

2. OBJECTIVE

- To determine the variety of short and long term courses to be offered by the institute;
- To provide prerequisites and modalities for upgrading the courses offered by the institute from certificate to diploma and beyond
- To develop guideline for monitoring, evaluation, implementation of training programmes and reporting;
- To provide a list and types of teaching and learning infrastructure/facilities required for the Institute;
- To provide plan for human resource development;
- To Propose framework for institutional collaboration locally, regionally and internationally;
- To Propose fund raising mechanisms for the Institute;

3. SCOPE OF THE WORK AND DESCRIPTION OF THE ASSIGNMENT

- i) Examine and assess the existing policies for agriculture training information and documentation;
- ii) Identify teaching and learning infrastructure and facilities needed based on KATI training programmes, administrative and management functions;

- iii) Assess existing human resource capacities based on expertise required for effective functioning of KATI;
- iv) Assess the existing monitoring and evaluation tools of the Institute;
- v) Identify and develop methods for working with stakeholders, partners and collaborators for KATI locally, regionally and internationally;
- vi) Develop one year action and monitoring plan for the institute.
- vii) Identify potential sources for resources mobilization.

APPENDIX 2. A potential Norwegian partner for KATI

As part of this assignment, and with reference to the ToR 3.v, this reviewer visited Sogn Jordbruks- og Hagebruksskule (SJHS) in Aurland in Western Norway. An application to the Norwegian Peace Corps (Fredskorpset, FK) is being prepared by the two partners designed to offer transfer of teaching and research expertise from Aurland to KATI in the field of goat husbandry and improved goat milk products. At the same time SJHS may gain access to Zanzibar expertise on tropical agriculture and development challenges through the exchange of personnel.

SJHS has a near-century old tradition of training staff to levels similar to those of KATI's, well developed facilities and dedicated staff. Its experience in training students, also from other countries, may be valuable for a KATI in expansion. Also, as SJHS is preparing to renew some of its training facilities, the planning procedures may prove useful if KATI is set to expand. Goat keeping, also with breeds similar to the Norwegian Dairy Goat that has been introduced to Tanzania in general, and also to Zanzibar, is among the strongpoints of SJHS, together with its emphasis on organic (ecological) production and its knowledge of the certification procedures for organic produce.

If an FK application is successful, KATI (and also SJHS) stands to benefit significantly from the potential strengthening of expertise in the field of goat keeping and goat products.

APPENDIX 3. KATI's staff resources

(Provided by KATI's Administration)

The institute has 25 members of academic staff and 49 members of field/technical and administrative staff distributed as follows:

Department	Total	Academic staff		Technical/Administrative	
		Female ()	Male	Female	Male
1. Administration	49			23(%)	26
2. Crop production Dept.	9	1 (25%)	8		
3. Livestock production Dept.	9	3 (27%)	6		
4. Agro-mechanisation Dept.	3	0 (0)	3		
4. Agriculture Extension Dept.	4	2 (0)	2		
Total	74	6	19	23	26

Note: 1) Numbers in () are % Females

2) Three tutors from Crop production Dept., one (1) tutor from Livestock production Dept. and one (1) tutor from Agriculture Extension Dept. are also involved in administrative duties.

Out of 25 members of academic staff only four have M.Sc. while thirteen have first degrees and the rest 12 have Diploma in various fields of specialisation. Of the 13 first degree holders, eight are undergoing Masters Programmes while for the 8 diploma-holders; four are pursuing undergraduate studies - one at the Open University of Tanzania, one at SUZA and two at SUA. One academic member of staff, a diploma holder, is on leave without pay. There are also twelve (10 males and 2 female) part time tutors.

APPENDIX 4. KATI's Academic staff resources

(Provided by KATI's Administration)

LIST OF FULL TIME TUTORS

S/N O	NAME	SE X	QUALIFICATION	REMARKS
1	Mohamed Khamis Rashid	M	BSc. zoology and Botany, M.A. Development Studies	KATI Director
2	Salum Abdalla Salum	M	B. Sc. Agriculture General	Chief Academic Officer (On Study – MSc. Crop Protection)
3	Othman Mohamed Ahmed	M	B.A. and MSc. Rural Development	Registrar
4	Burhan Said Ahmed	M	BSc. Agriculture General, MSc. (Plant Pathology)	Tutor and Head, Department of Crop Production
5	Juma Abdalla Issa	M	Diploma Crop Production	Tutor and Head, Agriculture Extension Department
6	Ali Khamis Makame	M	Diploma Agro-mechanization	Tutor, Head of Agro- mech Department
7	Vuai Abeid Vuai	M	Diploma - Animal Health (BSc. Animal Production)	Head of Department – Animal Science
8	Foum A. Garu	M	B.A. Development Studies	Students' Warden
9	Shaame Matta Shaame	M	B.Sc. Agriculture Engineering	Tutor
10	Mussa Ramadhan Said	M	BSc. Botany	Tutor
11	Said A. Bakar	M	Diploma - Animal Health	OUT Student (BA. Social Work)
12	Khamis Juma Shamte	M	Diploma Animal Production	Tutor – Animal Science
13	Khamis H. Sungura	M	BSc. Animal production and MSc. Animal Production	Tutor
14	Salma Yahya Shehe	F	BA. Development Finance and Investment Planning	Tutor

15	Mbarouk Juma Ali	M	BSc. (Biology and Geography) Education	Tutor
16	Zainab H. Moyo	F	BSc. Environmental Management	(On study MSc. Natural Resource Management)
17	Juma O. Abdalla	M	B.A. Rural Development	(On Study – MA. Rural Development)
18	Nunuu I. Omar	F	BSc. with Education	Study leave (MSc. Food Science and Nutrition)
19	Makame M. Ali	M	Diploma - Horticulture BSc. in Home Economic	Study leave – MSc. Home Economics
20	Patima Abubakar Abdisalam	F	Diploma – Horticulture	Study Leave (BSc. Education)
21	Khamis Moh'd Khamis	M	Diploma - Animal Health BSc. Animal Production	Study Leave(MSc. Animal Production)
22	Kombo Ali Rashid	M	Diploma – Agro-mechanization	Study Leave (BSc. Extension)
23	Ali Kassim Salum	M	Diploma - Animal Production	Study Leave (BSc. Extension)
24	Maryam Ali Hassan	F	Diploma - Human Nutrition and Food Production BA. Rural Development	Study Leave (MA. Rural Development)
25	Salama Aboud Talib	F	Diploma Animal Production	Leave Without Pay

Appendix 5. Consultant's itinerary

24 April 2013 : Koppang (by road) – Oslo – Istanbul –Dar es Salaam (by air)

25 April: Meeting in Dar es Salaam with UMB and KATI staff. Travel by air to Zanzibar

26 April – 29 April: Project work in Zanzibar

30 April: Zanzibar – Dar es Salaam (by boat), meeting in Norwegian Embassy, Dar es Salaam – Zanzibar (by boat)

1May – 9 May: Project work in Zanzibar

10May: Zanzibar – Dar es Salaam (by boat), Meeting in the Norwegian Embassy.

11May: Dar es Salaam – Istanbul – Oslo (by air) – Koppang (by road)

Appendix 6. People and organizations met as part of this consultancy

During the course of the project work in Zanzibar the consultant met with academic and non-academic staff and students at KATI in group and face to face meetings.

The consultant met with senior representatives of the Ministries of Agriculture and Natural Resources, of Livestock and Fisheries and of Tourism.

The consultant met with the KATI Council Chair.

The consultant met with a former Minister of Agriculture, with the Deputy Vice Chancellor and senior staff of SUZA, and with an indigenous and an international NGO. The consultant also met with representatives from a US and an Italian NGO.

The consultant met with 2 farmers' groups (one dairy group and a vegetable farmers group).

The consultant met with representatives of the Royal Norwegian Embassy in Dar es Salaam on two occasions (briefing/debriefing).

Prior to travelling to Tanzania the consultant met with senior staff and students at Sogn Jordbruks- og Hagebruksskule in Aurland, Norway.

The consultant also met with senior scientific staff, including library staff, of Noragric, Norwegian University of Life Sciences at Ås, Norway.

During the discussions it was agreed that the consultant would treat statements in confidence. The list of people consulted is therefore held in general terms.