

# **Notes on Capacity Building for Vulnerability Assessment (VA) and the Household Economy Approach (HEA) within the South African Vulnerability Assessment Committee (SAVAC) and its Provincial VACs (PVACs)**

## **History**

The South African VAC has began its interest in livelihoods-based vulnerability assessment in 2011, with livelihood zoning taking place in the Western Cape. This expanded to the rest of the country in 2012 and was completed in 2014, and in 2015 the first livelihoods baseline assessments were completed in four livelihood zones in Limpopo Province, followed by a limited outcome and forecast assessment for that province at the end of the year.

In 2016 the SAVAC vastly expanded their activities to complete baselines in nine livelihood zones in KwaZulu-Natal Province, one in Free State Province, one in Mpumalanga Province and four livelihood zones that straddle Limpopo and Mpumalanga. In addition to the new baselines a *national* outcome and forecast assessment was completed, including in urban areas and commercial farming areas.

Much has been learned in order to complete this large body of work. In the process, there have been two Introductory HEA (HEA 101) courses, three Baselines Assessment courses and one Outcome and Forecast Assessment (HEA 202) courses, which have been attended by both national and provincial practitioners. Participants in these course have come government departments from different levels (national, provincial

and district), non-government organisations and universities. In addition to classroom study, practitioners have learnt valuable lessons in their field work and analysis that can be leveraged for future endeavours.

## VA and HEA Courses

The Household Economy Approach is new to South Africa but has been around in the world since the early 1990s (approximately, since the early days of the Internet). In this time a number of structured courses have been devised to fulfil different purposes. A few of these courses are:

1. Introduction to HEA (HEA 101). This brief, two-and-a-half day course explains the HEA process from beginning to end with examples and a modelling scenario. It is intended for users and managers of HEA information, as well as being a good overview for practitioners going on to the next stages.
2. HEA Baselines Assessment (HEA 201). This is an 8-day in-depth course for practitioners to learn how to conduct interviews, to calculate outcomes, to cross-check their data, to record their field notes into specially-designed forms, to use secondary sources, and to analyse and summarise their results on the Baseline Storage Spreadsheet (BSS).
3. HEA Outcome and Forecast Analysis Assessment (HEA 202). This is a 5-day course that covers the field work and, more importantly, the construction of all the parameters and scenarios needed for a forecast analysis of livelihoods and food security outcomes. It includes the use of remote-sensing imagery, ground-measured data, crops estimates, price time-series and scenario forecasts.
4. HEA Mapping and map data extractions (HEA 302). This 6-day course explains how maps are stored on computers and the different kinds of map data sources (map formats like OGC tables for databases, KML/GML files, geoJSON files and shape files). It introduces various map software such as Google Earth and teaches creation the professional maps with Open Source software like QGIS. It also provides an introduction to coordinate reference systems (CRS) and geo-referencing map images to local CRSs, raster-to-vector conversions (essential for 'capturing' hazard areas from remote sensing images) and for overlaying outcomes to population data feature sets (useful in calculating affected areas).
5. Database management, SQL and data extraction (HEA 303). This 6-day highly advanced course introduces the PostgreSQL database (or Postgres) with spatial extension, PostGIS. The course shows how to install Postgres, how to set up the PostGIS extensions and how to load data into it. Thereafter, the courses introduces Postgres tables, queries, views and indexes and demonstrates how to write simple queries, followed by slightly more complex ones for PostGIS. The end of the course features the design of a complex query to produce population numbers and deficit details from an outcome analysis, given hazard definitions, population data in by enumeration areas and annual population projections.

More highly advanced courses can be assembled for interested VA practitioners: courses on data scraping and data mining, the command line for automation and batch scripting, basic programming for analysis, advanced SQL queries, an introduction to Linux, building servers in the cloud, web-mapping and data sharing, using statistical packages like R and other open source data products. These next-generation tools can harness HEA and combine it properly with other datasets to multiply value and provide powerful analysis.

# VA and HEA Competencies

It can be said that there are various different levels of competencies and understanding with regard to livelihoods, the household economy approach and vulnerability assessment. These different levels of competencies are required for performing different kinds of tasks and they are also dependent to an extent on the technical interests and job requirements of the persons concerned.

- **Level 1:** Decision-makers and users of VAC information. This requires the least in-depth knowledge but does require a good, solid grasp of the concepts. People who use VAC household economy information need to be aware of its capabilities, its limitations and be able to criticise or defend an analysis when the need arises. Attendance at the short HEA 101 course is a pre-requisite, as is experience in chairing or contributing to meetings with HEA content. They are empowered to preside over meetings, engage in technical discussions and defend their subordinates' work at higher-level meetings.

This group includes senior managers such as directors, deputy directors and supervisors in DAFF (6), the provincial agricultural manager from Limpopo (1), academics from the University of Limpopo (6), Sefako Makgatho Health Sciences University (2), the University of Fort Hare (2), Albert Luthuli University (2) and the University of KwaZulu-Natal (1), as well as technical staff from SAVAC member-agencies such as the Department of Health (1), Statistics South Africa (1) and the Agricultural Research Council (1) have comfortably reached this level. Provincial agricultural managers in Mpumalanga, Free State and KwaZulu-Natal may need to complete the HEA 101 course to also be said to have reached this level. *There are thus at least 20 people that are competently at level 1 (excluding those that are also at other levels)*

- **Level 2:** Field work and analysis participants. These are really the 'ground troops' of HEA studies and they will have a good combination of local knowledge and field assessment skills on reaching this level. To get here, practitioners need to have attended the HEA 201 and HEA 202 courses and to have participated in at least one of type of assessment and analysis (baselines and outcome forecast assessment). Practitioners at this level can conduct interviews unsupervised, complete all forms and data capturing competently, participate meaningfully in analysis and present and defend their work.

This level includes a large number of provincial and district practitioners: 10 in Limpopo, 26 in KwaZulu-Natal, 3 in Free State and 8 in Mpumalanga. *The total number of people at this level is 47.*

- **Level 3:** Field work and analysis team leader. The field team leader needs to complete the same courses as the participants (Level 2) but must have considerably more practice (at least two rounds of each type of assessment). The team leader is usually responsible for data entry into the BSS, overseeing the individual team members and checking their paper interview forms. Field team leaders need to be able to plan the field activities and manage important logistics such as travel and accommodation arrangements (they may delegate this but they will need to take responsibility for it—the buck stops with them). Furthermore, field team leaders generally also travel to provinces, districts and communities before the assessment to ensure cooperation and to advise of the impending activities.

*There are 7 people at this level, mostly from DAFF national headquarters (two are from Limpopo).*

- **Level 4:** Technical lead and project designer. The Technical lead and project designer must understand the entire process, the requirements in terms of person-days of work, training requirements, budgets, logistics and distances, as well as having a complete understanding of the technical process. This is important so that quality is not compromised when budgets are limited (which produces waste through expensive but unusable surveys). The Technical lead must have a full understanding of the field forms and the BSSs, as well as how to go about summarising and analysing the field data. Lastly, the technical lead needs to be able to confidently conduct HEA 201 and HEA 202 training for new staff.

There are 3 people at this level, all from DAFF national headquarters and the SAVAC secretariat.

- **Level 5:** Technical supervisor for troubleshooting, technical support and quality assurance. This person will have an in-depth understanding of the BSS and the analysis spreadsheet, being able to prepare clean blank versions for new assessments, or to fix broken formulae if there are small problems in existing sheets. A technical supervisor is able to quickly spot anomalies in data and to question the sources, looking for possible solutions that will solve problems. This applies to field work as well as to data management tools such as the BSS. An important qualifier for this level is experience, with the practitioner hopefully having undertaken work in different countries and contexts. Practitioners at this level can deliver training for HEA 101, HEA 201 and HEA 202 confidently and capably to both inexperienced and experienced staff.

*No staff are confidently at this level yet.* To get people from Level 3 and Level 4 to this level requires that they partake in assessments in other provinces and other countries, playing a role with leading in training activities and preparation for assessments.

- **Level 6:** Advanced technical support with database querying, mapping, geo-databases management, provide bespoke problem solutions, and undertake population calculations. This is more highly specialised work, with the practitioner having knowledge and experience of open-source SQL databases like PostgreSQL or SQLite, as well as geo-databases like PostGIS. The practitioner must have a basic understanding of projections and coordinate management and be able to create good quality maps on an application like QGIS (open source). However, it is not necessary that the practitioner is completely proficient in all aspects of SQL, geometry calculations and query language but must know where to find resources and be willing to learn. Completing HEA 302 and HEA 303 are necessary to be at this level of proficiency, although the practitioner may (and should) seek assistance in designing complex queries or running data analysis.

*No staff are at this level yet* but with training and support a small group of 3-5 people could easily reach it.

- **Level 7:** Innovative and creative thinkers who can make new extensions to the framework, seek out new solutions and merge new sources of data for meaningful analysis. This last level is all about breaking out beyond the usual paradigms—practitioners at this level would include researchers and innovators. They will use the tools and training above to develop new solutions or make major improvements to systems. In the areas of data analysis or munging, they will need programming knowledge, development operations skills for leveraging cloud solutions, machine learning and analytics. They will need to be creative in the use of web and other new technology for dissemination and they will need to learn how to extensively mine new data for improved insights. If they are building field knowledge, they will need to be exemplary in their techniques and in their understanding of human conditions.

There could be questions about how realistic it is for government officers to move to this level, given the demands placed on them for service delivery and policy implementation (rather than experimentation of methods and ideas). Perhaps this level of activity may only be possible for academics or researchers from ARC, CSIR or other research institutes (if they are members of the SAVAC) or for independent consultancies.

## Sustainable Capacity Building

“Capacity building” is often a goal in and of itself. However, for a capacity development in vulnerability assessment and the household economy approach to become sustainable, the investment in training by government agencies has to appear sufficiently worthwhile. This, in turn requires that the courses listed

above become accredited. There is a financial incentive for this: accredited courses that are attended by employees are refunded to the employees directorate (if the employee is in government) or they are deductible for tax (if the employee is with a private company). There are three different modalities for accreditation:

1. Accreditation through the South African Qualification Authority (SAQA) and the relevant Sector Education and Training Authority (SETA). This requires linking the courses to existing Qualifications and Unit Standards, which is difficult since HEA and VA are relatively new topics of study. SAQA qualifications and unit standards are also geared towards “Further Education and Training” (FET) courses (practical courses for high school leavers or for those without completed high school), whereas VA and HEA courses are more like Continuous Professional Development (CPD) courses.
2. Attached the courses to a CPD programme. In this case, the courses will need to be approved by the relevant statutory council for a profession so that participants can earn CPD points. The question is: which profession? Possibilities include: the South African Council for Social Service Professions (SACSSP), the South African Development Studies Association (SADSA) or the South African Monitoring and Evaluation Association. The difficulty is that VA and HEA do not yet affil under any statutory bodies that will approve the courses for CPD scoring.
3. Accreditation through an educational institution like a university. This would seem to be the best approach but universities are notoriously slow and ponderous about adding and accrediting new courses to their curricular. This may take considerably longer than either of the other two possibilities and furthermore, universities prefer short courses like the ones presented above to bring in much-needed extra revenue, which challenges the sustainability of the courses.

Accreditation may also demand that trainees are assessed on their actual skills in completing the work—so field experience gets added into the training mix. Further, tests or examinations may be necessary for the courses.

Accreditation really remains the only way forward for meaningful long-term sustainability to capacity building—until then it is likely that all courses will be one-off activities funded by projects through grants.

## **Lessons Learned from Completed Baselines**

An extremely valuable exercise for the SAVAC to undertake would be to document the entire baseline assessment process in the South African context, starting from drafting the terms of reference and budget (what items to include in those documents), to working with the provincial governments, then advising local councillors, traditional leaders and authorities (such as the local police station) of the impending assessment. Other processes such as training requirements, suitabilities of venues and materials needed should be expounded. Logistical arrangements such as accommodation and travel need to be discussed. Lastly the documentation should include field processes, such as appointment timings, refreshments for interviewees, focus group compositions and suitable spaces for discussions. These factors can all make or break a set of village interviews and if not rectified, a whole assessment.

The idea would be to tailor the generic baselines assessment process to the peculiarly South African context, taking into consideration local representation and authority, the value of people’s time for interviews and village conditions. This will be an indispensable guide to future assessments and can be incorporated into future trainings.

The work should be undertaken by experienced secretariat staff and reviewed by managers and outside experts if need be. The idea is to draw on the considerable body of experience that has been built up over the preceding three years.

## Summary of Recommendations

1. Run some HEA 101 courses for managers and users of the information (particularly at provincial level and for national departments, include officers from outside of DAFF and possibly even SAVAC, as well as communicators—public relations—so as to encourage engagement). This will increase the numbers of people at Level 1;
2. Develop a document on SAVAC best-practices for baselines and OFA assessments;
3. Continue with training of officers for field assessment (HEA 201 and HEA 202) as the need for these assessments arise. This will increase the numbers of officers at level 2 and 3 and must be progressively handled more and more by the advanced SAVAC and secretariat staff themselves (which will increase the numbers at level 4);
4. Move provincial staff to other provinces to lead assessment teams. Lobby SADC and other international organisations to have SAVAC staff included on foreign assessments, in order to build experience and competence among staff members and increase the numbers at level 5;
5. Have a small cadre of the most confident and skilled officers complete the advanced HEA data courses (HEA 302 and HEA 303) to develop mapping, data management, data munging and data analysis skills. This will provide a small group of people at level 6;
6. Get the courses and learning accredited; this will improve the prospects for departments, agencies and partners investing in the training and developing their staff skill sets.