Chapter 4

Tensions between functions in the research university

Historically-determined functions of universities

According to Castells (2017), the ability of universities to manage contradictory functions, while also emphasising the university’s role in generating knowledge and training self-programmable labour in the information age, will to a large extent determine the capacity of countries and regions to become part of the global economy. The four historically-determined functions of the university proposed by Castells are: producers of values and social legitimation, selection of the elite, training a professional labour force, and the production of scientific knowledge (Castells 2017).

Castells’s position regarding the relationship between these four functions is one of unavoidable conflict (Muller 2017). The important consequence is that universities should expect conflict when attending to their functions. The functions are socially-determined forces that are in collision with one other, and this collision needs to be understood, mediated and managed:

[T]he critical element in the structure and dynamics of the university system is their ability to combine and make compatible seemingly contradictory functions which have all constituted the system historically and are all probably being required at any given moment by the social interests underlying higher education policies. It is probably the most complex analytical element to convey to policy-makers: namely, that because universities are social systems and historically produced institutions, all their functions take place simultaneously within the same structure, although with different emphases. (Castells 2017: 42)
Leading universities in Africa, as part of their ‘revitalisation’ in response to influential voices calling for a re-orientation, often using both an ‘instrumentalist’ and ‘engine of development’ discourse, have developed a new discourse of ‘development’ and knowledge production with research emerging as a central tenet (see Chapter 3). Castells had predicted that universities in developing countries may react to the ‘new’ emerging global informational economy by ‘rushing’ towards the new mode of production and development by making rhetorical commitments to it without fully appreciating what far-reaching changes this would imply for the economy and universities alike. The vision and mission statements of the eight universities are presented in Part 2 of this book and support the observation that there has been a move towards an economically instrumental and engine of development view of the university. But how has this resultant shift been handled in African universities?

**Contemporary tensions between functions in universities**

The Herana project focused mainly on the Castellian function of scientific knowledge production because it aligned conceptually with the positive relationship between knowledge and development, but also because the leading universities in Africa had self-articulated aspirations for their emergence as research universities participating in the global knowledge project. In keeping with Castells, the project team was cognizant of the tensions inherent in managing a shift towards research in universities historically orientated towards elite selection and training. The genesis and tradition of the colonial-era African university is rooted in a role to serve primarily an elite socialisation function, though this function was not pursued further in the empirical indicators of the Herana research. Nevertheless, the variable imprint of this legacy is clearly seen in the performance indicators of the African universities in the Herana sample.

Herana did, however, pursue its interest in the knowledge production function by paying attention to other historically determined university functions. For example, data and indicators on student enrolments, student–staff ratios and differences by broad field of study at the undergraduate level are an acknowledgement of the broader role universities play in society.

There was also an awareness of the university ‘being submitted to the pressures of society, beyond the explicit roles they have been asked to assume’ (Castells 2017: 41). In the first phase of the Herana project, attention was paid to the extent to which university research projects, often resourced by external funding, were connected to the needs and interests of stakeholders external to the university while simultaneously meeting the requirements of a research-led university, that is,
strengthening the academic core of the university (Cloete et al. 2011). This position is articulated in the original hypotheses put forward by Herana (see Chapter 1). In the second phase of the project, social connectedness was reconceptualised to capture the tension between the demands of society and the requirements of a university focused on research (Van Schalkwyk 2015). Universities must manage this tension in such a manner so as not to become too service-orientated and forego the production of new knowledge; nor should they become so disconnected from the needs of communities and only produce new knowledge that is of little relevance to them. The expectation is for universities to be productive forces in the knowledge economy; an expectation that is legitimised by invoking the fact that universities are publicly-funded institutions in the service of society.

Herana, then, paid attention to two of the four Castellian functions and to the additional pressures emanating from the social environment because of its developmental potential; attention that dovetails with the three functions of universities referred to consistently in the higher education studies literature, namely, to research, teaching and community development (or engagement as the ‘third mission’ of the university).

As shown in Chapter 3, one consequence of the dominant instrumental model steering the relationship between universities and development, is the relative neglect of universities’ function as knowledge producer. As universities become more ‘research-orientated’, varying interpretations of what constitutes the production of scientific knowledge can be brought to bear in plotting the strategic direction to be followed by the university and, subsequently, in the implementation of that strategy. These interpretations are often shaped by discordant and even competing global, national and institutional expectations.

Different interpretations of what constitutes knowledge production are apparent as universities attempt to operationalise their new research focus. It is possible to detect these interpretations in the empirical data collected by the Herana project. In particular, trend data on numbers of students enrolled, enrolments by qualification type, and student-staff ratios are informative with regard to teaching, while trend data on scientific publications and postgraduate enrolments with an emphasis on doctoral enrolments inform inferences about research activity. Data from the Herana sub-project on community engagement and how it relates at the project level to the academic core at three of the eight participating universities is informative in terms of how community engagement is balanced with the requirements of the academic core.

These interpretations and their operationalisation find expression in the functions of teaching, research and community engagement resulting in tensions that lie on a continuum which at the one end interprets
knowledge production in a way that will not necessary produce the kind of knowledge required to drive development and at the other end interprets the production of knowledge in a manner that will allow it to participate in the global knowledge economy while remaining connected to national development needs.

In the case of its training function vis-à-vis the production of scientific knowledge, the university can choose either to concentrate on the certification of undergraduates with little regard for their postgraduate studies, or it can encourage the continuation of selected undergraduates to postgraduate studies. It is the cadre of postgraduates, particularly doctoral graduates, that will fill future academic posts and be the knowledge producers of the future. In terms of its postgraduate training, the university can produce graduates that are attuned to the requirements of the labour market in the information age (what Castells refers to as ‘self-programmable labour’), or it can warehouse large numbers of students, with little consideration for their eventual contribution to the knowledge economy. Castells (2017) describes warehousing of university students as a response to the social pressures exerted on the university – as society observes the social and economic benefits accruing to those who attend university. According to Case (2018), Castells’s stance on warehousing shifts over the course of the 20 years that follow his first description of the warehousing of students as higher education massifies. It is a shift that, according to Case, increasingly acknowledges the economic and societal value of warehoused students. But there is no indication that warehousing poses any less of a risk to the productive contribution of universities dependent on their production of new scientific knowledge; particularly in universities that lack the capacity and/or the autonomy to manage together mass teaching and knowledge production.

In the case of community development, the university faces several choices. From a knowledge production point of view, it can interpret the engagement activities of academics as being simultaneously responsive to the needs of communities and creating new scientific knowledge. This is the interconnected interpretation. It can also interpret engagement as the application of existing knowledge in the delivery of services to the community where community could equally be non-academic, on-campus communities (e.g. students); communities on or near the doorsteps of universities (e.g. neighbourhood communities); or private firms and industry. The university may also produce new knowledge in the service of industry, with little say over problem, process or the ethics of application. The knowledge-as-service interpretation throttles the production of new knowledge while the knowledge-in-service interpretation leaves no room for curiosity-driven scientific enquiry.
The production of knowledge in the service of external stakeholders is not only an interpretation on the part of the university on how to engage, it is also one interpretation of the kind of research to be promoted within the university. The motivations may not be the same. Engagement may be motivated by social pressures; applied research may be motivated by additional factors such as the creation of additional income streams for the university. Within research as a core university activity, the university may therefore be attracted to promoting the kind of knowledge production that is directly linked to the research agendas and needs of development aid agencies or industry (that is, consultancy research or applied research). At the other end of the interpretation continuum, the university may insist on protecting and supporting research whose sole criterion is the production of new knowledge that advances understanding (that is, ‘basic’ or ‘blue sky’ research).

Given these latitudes of interpretation, how has the articulation of a knowledge production orientation by universities affected their teaching, research and community engagement? Given their aspirations, are universities able to operationalise the three functions in relation to the production of scientific knowledge?

How universities are managing the tensions between functions

Cloete et al. (2015) provide an early example of the challenges faced by Herana universities as they attempt to convert their knowledge production aspirations into reality. Three participating universities were put under the microscope – University of Mauritius, University of Nairobi and Makerere University. All three committed themselves to strengthening their scientific knowledge production function. But Mauritius showed that while policies regarding the role of the university in the knowledge economy are in place, the contradictory functions of training for the labour market and producing scientific knowledge have not been managed in a way that has allowed the university to assume a role as a producer of new knowledge in the country’s envisioned knowledge economy. As a result, the function of undergraduate training has remained dominant at the expense of the production of scientific knowledge. Similarly, despite strong institutional commitments to strengthening knowledge production at both Nairobi and Makerere universities, without national support to curtail the pressure for income-generation through increased undergraduate enrolments, the universities could not manage the contradictory demands of undergraduate training and knowledge production.

In the sections that follow, the University of Mauritius and Makerere University are again examined by applying the conceptual framework
presented above. The University of Ghana is analysed in place of the University of Nairobi because Nairobi discontinued its participation in the Herana project in 2014, and because the University of Ghana participated in the Herana sub-project on community engagement (along with the University of Mauritius and Makerere University).

The University of Mauritius

The data show that Mauritius has neither seen dramatic increases in its student enrolments, nor has it successfully transformed the teaching of students in a manner that integrates knowledge production at its core. In other words, growth in student numbers has been contained, but the number of postgraduate enrolments has not increased nor have student-staff ratios in science, engineering and technology (SET) improved.

Average year-on-year growth in student enrolments from 2001 to 2015 was a relatively modest 5.8%, almost half that of universities such as Eduardo Mondlane, Ghana and Nairobi. At the same time, there has been no change in the proportion of postgraduate students enrolled. In 2001, 2.2% of total head-count enrolments were doctoral students and by 2015 the proportion had decreased to 0.6%. In the case of masters students, enrolments increased marginally from 6.6% in 2001 to 9.0% in 2015. Enrolments in SET decreased from 50% in 2001 to 40% in 2015, while enrolments in business, economics, finance and related areas of study increased from 24% in 2001 to 33% in 2015. The ratios of students to staff in all three broad areas of study exceed the Herana targets but it is in SET where Mauritius misses the target by the greatest margin. In 2001, there were 25 students for every 1 full-time academic staff; in 2015, the number of students had decreased marginally to 24 students for every 1 full-time academic staff member, well above the target of 15.

Both the current (2015–2020) and previous (2006–2015) strategic plans of the University of Mauritius (2005, 2015) make reference to community engagement as being one of the six strategic directions of the university. The university embraces community engagement as being both central to the university’s mission and as an opening to excellence in teaching, learning and research. Community engagement is seen as the mechanism through which university staff and students make contributions to local and global issues (e.g. problems of environmental sustainability, poverty and health) by either participating in or contributing to public discourse in relevant domains and by sharing their expertise with members of the broader community. The term ‘community engagement’ is used to designate all university activities (commissioned teaching and research, consultancy, advisory services, analytical work, community services, etc.) whereby the university
partners with government, industry, civil society and other stakeholders for a specific piece of work, and/or where the results of any university activity can be of direct benefit to stakeholders.

In addition, one of the five core values identified for the ‘Strategic Plan 2015–2020’ is social responsibility: ‘The University believes that its sustainability cannot be ensured without accomplishing its social responsibilities. Its services are accessible to all citizens of Mauritius as its staff put their expertise at the service of society.’

A sub-committee, comprising representatives from university faculties and centres, was established to spearhead the activities under this strategic direction. The monitoring of the key actions and the key performance indicators (Table 4.1) is done annually by the Strategic Plan Monitoring Committee. The strategic plan was cascaded to each faculty and centre so that each could develop its own goals and indicators for each strategic direction including community engagement.

Table 4.1 shows that community engagement as conceptualised in the university’s strategic plan is skewed towards the application and dissemination of completed research in the form of services and solutions delivered to local communities. Engagement is not seen as an activity that feeds into and strengthens the university’s production of scientific knowledge. This approach is confirmed in the Herana data based on 62 engagement projects in five faculties and two centres at the University of Mauritius. With some notable exceptions, the Herana data show that with a mean score of 3.6 out of a possible 9.0, the majority of engagement projects are not effectively managing the tension between connecting to the needs of communities and to the research production function in the academic core of the university.

The underlying data reveal several noteworthy characteristics of engagement at the University of Mauritius vis-à-vis its aspirations to produce scientific knowledge. The data show that project funding is short-term, from single sources and predominantly from international agencies rather than from government: 17% received funding from the Mauritius Research Council and 9% received funding from government ministries. The university provided funding to 22% of the projects.

Most projects (47 out of 62) tended to score higher on the articulation indicators compared to the academic core indicators. The mean scores for all five of the academic core indicators were less than half of the maximum score attainable. Only 19 (30%) projects required original research to be undertaken as part of the project and of the academic core indicators; projects fared worst in terms of publishing findings, illustrating that most projects did not generate new knowledge, or at least disseminate it to peers.
Table 4.1 Objectives, key actions and key performance indicators for community engagement

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<tr>
<th>Objectives</th>
<th>Key actions</th>
<th>Key performance indicators</th>
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<tr>
<td>To promote university-community partnership</td>
<td>Include the voice of the local communities in the university research agenda through meetings and workshops</td>
<td>Number of organisations contributing to applied research at community level</td>
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<td>Create broad public awareness of the university’s mission and contributions</td>
<td>Number of outreach workshops/extension activities/community engagement placement opportunities</td>
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<td>To apply current knowledge to the country’s evolving needs</td>
<td>Act as a ‘think tank’ for the country</td>
<td>Number of public lectures and talks on national issues organised</td>
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<td>To adopt strategies that enhance proximity with our community and our alumni</td>
<td>Provide services to communities living around the campus</td>
<td>Number of activities carried out benefitting the local community</td>
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<td></td>
<td>Promote the ‘alumni for life’ concept</td>
<td>Number of projects in collaboration with alumni</td>
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<tr>
<td></td>
<td>Determine avenues of collaboration with UoM alumni to expand the opportunities of students and to help the community at large</td>
<td>Number of alumni providing services, facilitating placements and mentoring UoM students on placements</td>
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<tr>
<td>To promote formal and informal education and to disseminate research findings through social networks and open educational methods</td>
<td>Develop an integrated and user-friendly web portal for the delivery of community engagement programmes and alumni activities</td>
<td>Dissemination of research findings to end-users in lay terms in the local media</td>
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<td></td>
<td>Make better use of UoM website and social media to foster greater public recognition and appreciation of the accomplishments of the UoM with regards to community engagement</td>
<td>Statistics related to Facebook, Twitter (e.g. followers, mentions, likes)</td>
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<td></td>
<td>Develop certificate (award or non-award) programmes targeting specific groups or fields</td>
<td>Number of non-formal or formal short courses for the community</td>
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<tr>
<td>To support the local community to develop sustainable solutions to immediate problems</td>
<td>Foster engagement with our communities of interest</td>
<td>Number of projects offering turn-key solutions for the communities</td>
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Projects located in two university centres – the Centre for Innovative and Lifelong Learning and the Centre for Biomedical and Biomaterials Research – perform better than those located in the faculties. In addition, projects in which academics at the University of Mauritius collaborated with international colleagues showed significantly higher scores than those projects where no collaboration was reported. A brief diversion back to Castells is illuminating. Describing new universities in developing countries and their place in the network society, Castells (2017) refers to specialised organisations that are part of the university system capable of organising external connections which, in conjunction with an emphasis on research, are needed to elevate a country’s productive system. Castells is not specific on the role these specialised organisations
are to play in the research process, but he seems to suggest certain structural arrangements could be put in place to act as switches between faculties and external communities. It is possible that it is exactly this role that is being played by the two centres at the University of Mauritius. Castells also argues that the notion of universities as stand-alone, major research institutions is no longer applicable in the information age. Universities as producers of scientific knowledge must participate in the global networks of knowledge production. If the university manages its function of community development in such a way that its engagement projects link successfully to global networks by means of collaboration, then the university is likely to be in a better position to produce scientific knowledge.

This brief overview of the findings of the Herana engagement sub-project reveals that the University of Mauritius tends towards service rather than a form of engagement with communities that both meets the needs of those communities while simultaneously contributing to its knowledge project. As the university itself concludes in an assessment of its engagement projects: ‘Despite the fact that the university aspires to be one of the leading international tertiary education providers and a research-led university, the high number of projects that claimed to be of service or outreach type was found not to strengthen the academic core’ (University of Mauritius 2016).

In terms of the production of new knowledge as indicative of its interpretation of knowledge production, the Herana data show an average annual increase of 7% between 2001 and 2015 for published scientific articles indexed in the Clarivate Web of Science. This equates to every academic at the university publishing a scientific article once every five years, from a low base of once every ten years. The Herana target is for every academic to publish at least one article per annum. Doctoral graduates as contributors to scientific knowledge production are a further indicator of the university’s interpretation of knowledge production. The university’s average annual increase in doctoral graduates for the period 2001 to 2015 was 1.5%, the lowest of all the participating Herana universities. Equally notable is an average annual increase of 8.1% in masters enrolments for the period 2001 to 2015 and a decline of −3.2% in doctoral enrolments for the same periods.

Based on the data presented, the University of Mauritius is still predominantly an undergraduate teaching university that seems to provide an active service to its external stakeholders. However, data also show that the services provided by the university are not of the kind that produce new knowledge. The university does, however, produce professionals for its increasingly service-oriented labour market (Oolun et al. 2012; Stiglitz 2011), particularly financial services, as the country
establishes itself as a gateway between Asia and Africa (Jonker & Robinson 2018). This could well be a national interpretation of what constitutes the knowledge economy, and one that differs from that adopted by the Herana project via Castells. It is nevertheless an interpretation that has served the country well in its transition to an increasingly service–based economy.

Makerere University

The Herana data show that Makerere University has managed enrolments by limiting growth at the undergraduate level while encouraging growth at the postgraduate level. Average year–on–year growth in student enrolments from 2001 to 2015 was 4.2%, one of the lowest in the group of eight Herana universities. The data also show a decrease in student enrolments from 2013 to 2015. At the same time, there has been some positive change in the proportion of postgraduate students enrolled at the doctoral level. In 2001, 0.1% of total head–count enrolments were doctoral students and by 2015 the proportion had increased to 1.8%. In the case of masters students, enrolments increased marginally from 4.9% in 2001 to 5.2% in 2015. Masters and doctoral enrolments at this level in 2015 both still fall short of the Herana target of 15% and 5% respectively, but the increase from 23 doctoral enrolments in 2001 to 680 in 2015 along with managed undergraduate enrolments could be read as a positive sign of the university’s attempt to shift towards knowledge–centric training.

Total student enrolments in SET are equally positive, with an improvement from 17% in 2001 to 33% in 2015, while enrolments in education, humanities and social sciences were reduced from 68% in 2001 to 46% in 2015. The 2015 ratios of students to staff in SET were fractionally above the Herana target of 15 students for every 1 full–time academic. In 2001, there were 6 students for every 1 full–time academic staff member; in 2015, the number of students had increased to 16 for every 1 full–time academic staff having peaked at 18 students per academic staff member in 2011.

In terms of community development, Makerere University’s mission is ‘to provide World Class innovative teaching, learning, research and services responsive to national and global needs’. The current ‘University Strategic Plan 2007/8 to 2017/2018’ includes knowledge transfer partnerships to improve community access to knowledge and skills, advice, technology and innovation at Makerere University. This approach is in line with the university’s shift from an outreach paradigm which presented a posture of patronage and an ivory tower to a knowledge transfer and partnership approach that recognises the availability of
knowledge in the environs of the university to enrich its research and teaching.

The university is in the process of establishing grants offices in each of its ten colleges; and three such grants offices have already been set up in the Colleges of Agriculture and Environmental Sciences, the College of Humanities and Social Sciences, and the College of Health Sciences. These offices will coordinate the engagement activities in the colleges. The grants offices fall under the centralised Directorate of Research and Graduate Training. Key performance indicators have been developed for community engagement and include:

- number of joint projects established with the community;
- number of operational business and technology innovation incubation centres;
- number of staff scholarships by the private sector and non-government organisations; and
- level of participation of the community in University policy and curricula development.

A total of 100 questionnaires were distributed to the ten colleges of the university targeting individuals based on information provided by the Finance Department in the university. A total of 15 questionnaires were completed by the respondents. With such a small return rate it is difficult to comment on how the university is managing its community development function. A previous study on university-community engagement that relied on a similar methodology and conducted as part of Herana Phase 2, managed to collect a total of 22 completed questionnaires. It is clear that while there is intent to move from community development as outreach to community development as mutually beneficial engagement, this function of the university remains ad hoc and poorly managed. The indicators in the Phase 2 study showed that engagement between university academics and those external to the university is active but that the nature of this engagement varies considerably, and the degree to which such engagement activities can be said to be strengthening the university as a key knowledge-producing institution is uneven and too frequently marginal.

In terms of the production of new knowledge as indicative of the kind of research typical of a research-led university, the Herana data show an average annual increase of 14.5% between 2001 and 2015 in scientific articles indexed in the Clarivate Web of Science. This was the largest increase across all eight universities. The improvement equates to every academic at the university publishing one scientific article once every two and half years from a low base of one article every ten years. The
Herana target is for every academic to publish one article per annum. However, the 613 scientific articles published by Makerere University academics in 2015 should be seen in context: while indicative of a marked improvement, its efforts are still well short of the 2,582 articles published by academics at the University of Cape Town in the same year.

The average annual increase in doctoral graduates at Makerere University for the period 2001 to 2015 was 14%. The number of doctoral graduates increased from a low base of 10 doctoral graduates in 2001 to 64 in 2015. This suggests that while Makerere has managed improvements in both of the two key knowledge outputs over the 15-year period, it has been more successful at doing so in terms of publications.

Based on the data presented, Makerere University appears to have had the most success of the three universities in shifting towards knowledge-centrism in its teaching, research and engagement. The shift is slight and is more evident in the university’s research function than it is in its training and engagement functions. This interpretation of how Makerere University is operationalising knowledge production is consistent with its classification in Chapter 2 as an emerging research university. However, there is limited evidence to suggest that its knowledge production is interconnected with its engagement in any significant way.

The University of Ghana

The Herana data show that in terms of managing the tension within its training function, the University of Ghana has veered towards the warehousing of students, particularly at the undergraduate level. The university has also been unsuccessful in transforming the teaching of its students in a manner that integrates knowledge production at its core. In other words, there has been a rapid growth in student numbers, but the number of postgraduate enrolments has not kept pace. Moreover, while the university is successful at ensuring that masters students graduate, it has less success in encouraging masters graduates to take up doctoral studies.

Average year-on-year growth in student enrolments from 2001 to 2015 was 9.4%, one of the highest in the group of eight Herana universities. At the same time, there has been no significant change in the proportion of postgraduate students enrolled. In 2001, 0.6% of total head-count enrolments were doctoral students and by 2015 the proportion had increased to 1.7%. In the case of masters students, enrolments increased marginally from 10.5% in 2001 to 12.5% in 2015. Masters and doctors enrolments at this level in 2015 both fall short of the Herana target of 15% and 5% respectively. Enrolments in SET improved from 22% in 2001 to 28% in 2015, while enrolments in education, humanities
and social sciences were at 63% in 2015. The ratios of students to staff in SET were below the Herana target of 15 students for every 1 full-time academic. However, the trend data show that the ratio is increasing – in 2001, there were 6 students for every 1 full-time academic; in 2015, the number of students had increased to 12 for every 1 full-time academic.

The data show that the University of Ghana has improved its efficiency in terms of masters graduates. In 2001, masters graduates made up 17% of masters enrolments and by 2015, this proportion had increased to 30%. This is above the Herana target of 25%. However, Herana shows that if the University of Ghana is to be categorised as research-led, the university should, based on 2015 enrolment data, have enrolled 2 000 doctoral students and graduated 400 doctoral students. Data for 2015 show that the University of Ghana enrolled 671 doctoral students and graduated only 25.

Community development is articulated in the University of Ghana’s mission statement: ‘to create an enabling environment that makes University of Ghana increasingly relevant to national and global development through cutting-edge research as well as high quality teaching and learning’. The university has also identified nine strategic priorities in its current ‘Strategic Plan 2014–2020’. Research is listed as its first strategic priority and it states that through research, the university intends to ‘create a vibrant intellectual climate that stimulates relevant cutting-edge research and community engagement’.

The Office of Research, Innovation and Development has developed a draft action plan for the uptake and utilisation of research evidence. The action plan proposed a database for capturing all research uptake activities that takes place at the university as a means to help measure the level of impact that the University of Ghana makes in improving the lives of the people and also contributing to national development.

In total, 209 faculty staff were approached to submit information on their engagement projects; only 19 projects were ultimately captured in the database. With such a small number of projects it is difficult to comment on how the university is managing its community development function. It is clear, however, that its projects are not connected directly to community needs, nor are they producing new knowledge characteristic of a research-led university.

In terms of the production of new knowledge, the Herana data show an average annual increase of 9% between 2001 and 2015 in articles indexed in the Clarivate Web of Science. This equates to an improvement for every academic at the university publishing a scientific article once every five years from a low base of one article every ten years. The Herana target is for every academic to publish one article per annum. The average annual increase in doctoral graduates at the University of Ghana for the
period 2001 to 2015 was 20%. While this was the highest average annual increase for all eight Herana universities, it should be noted that Ghana only graduated two doctoral candidates in 2001 and any increase is therefore measured from a low base. Ghana graduated 25 doctoral graduates in 2015, equivalent to the number of doctoral graduates at the Universities of Botswana and Mauritius, universities that are a third of the size of the University of Ghana.

Based on the data presented, the University of Ghana is predominantly an undergraduate teaching university. Trend data show an improvement in the total number of publications per annum for the period 2001 to 2015 but the improvement in publications per academic over the same period, is marginal. There is little evidence to suggest that its engagement activities contribute to the production of new knowledge. Overall, the university’s interpretation of research within the frame of social connectedness is one which does not support its aspirations to make the university ‘increasingly relevant to national and global development through cutting-edge research’.

Conclusion

The picture that emerges from the empirical data collected by Herana shows a mix of interpretations and uneven operationalisation as universities attempt to shift towards becoming recognised global producers of scientific knowledge while still labouring to come out from under the shadow of their colonial parent institutions and responding to social, political and other pressures emanating from their contemporary environments.

The global science network makes plain that there is a rift emerging in academia, also in African universities. If they are to thrive, the universities will have to ensure that they have a significant number of their scholars operating successfully in the global science network. But not every scholar can, or wants to be, a global star. Some will value local, grounded commitments above global eminence, and these will contribute to the local knowledge priorities that are particular to the local context. Mamdani (2018: 32) puts it well:

The local conversation gives rise to the committed intellectual, embroiled in public discourse, highly sensitive to political boundaries in the society at large; the global conversation calls for a scholar who takes no account of boundaries.

Both conversations are important, and African institutions need both kinds of scholar. The future of the African academy may well depend on
astute management of this new intellectual division of labour in the
global world of knowledge.

The tensions and contradictions that each institution faces also show
that it is important to avoid a single narrative and instead assess soberly
and critically the complex and contradictory changes that continue to
shape the continent’s higher education landscape.

Notwithstanding these challenges, these three universities have
expressed a shared aspiration to become producers of knowledge,
breaking away from the notion that the main function of universities in
Africa is the certification of graduates to populate the post-liberation
professional class. However, these three African universities still have a
long road ahead if they are to turn aspiration into reality. Not least will
be the challenge of managing their dual aspirations of engaging with
those external to the university while producing the kind of knowledge
that will stimulate national development and open the doors to the global
scientific community. They will also need to confront the daunting
challenge of shifting from being predominantly undergraduate training
institutions to being research-led institutions with more prominent
postgraduate profiles.