**Research data management in public universities**

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**PART A: TRANSCRIPTION OF DATA FROM DIRECTOR OF RESEARCH UNIVERSITY ONE (UNI1)**

***Interviewer:***

*As I said, I will interview you on issues to do with research data management.*

**DoR-UNI1:**

Thank you and go ahead.

***Interviewer:***

*How long have you been working at this university?*

**DoR-UNI1:**

I have worked at UNI1for many years, over well 14 years.

***Interviewer:***

*What is your role Director of Research?*

**DoR-UNI1:**

The role of my office is to coordinate all research activities taking place in the university. I also represent the university in all research activities at national and international fora.

**RESEARCH DATA CREATION PRACTICES**

***Interviewer:***

*How is your office or university encouraging research output amongst your employees specially lecturers?*

***DoR-UNI1:***

Maybe before I answer that question, let me state about why as a university indulge in research activities. Basically, research is very important for [UNI1] because it helps us on regional and international university ranking, and more importantly, it helps our academics to get promoted.

So, in the meantime, the only way we encourage researchers to publish is through promotion, that is, when academics publish, they get promoted. Very soon however, we want to start rewarding them through monetary incentives whereby when a researcher publishes in a reputable journal, they should receive some money as part of encouraging them to publish more.

Where researchers are supposed to pay processing fees and indeed, where they cannot manage to pay, the university comes to their rescue and support payment of publication fees.

So maybe those are the major areas through which the university is trying to encourage its staff to publish.

***Interviewer****:*

*Tell us what you know about the concept or digital research data*

**DoR – UNI1**

From the directorate point of view and also as a researcher, it’s a good thing because I know it can also be a resource, it’s also money. If you are well organised and good polices, it’s something that should be encouraged because it can be a source of revenue for the university. Basically, digital research data is in digital format, it is easy to share and re-use.

***Interviewer:***

*Since you have said research can be source of income, who owns data that researchers affiliated to UNI1 produce, here we are looking at self-funded research, research funded by the university and research funded by external donor.*

**DoR – UNI1:**

So, maybe let’s start by pointing out that at the moment, we do not have a clear policy and here we are talking about ownership of research data. We may have policies and guidelines about intellectual property, so the same issues you have heightened, we know that normally if it’s an academic research done through the university so the intellectual property you know initially will be with the university until you go through certain process. If it’s an independent study, the output of the research and data belongs to the researcher and we also know that if it’s funded by the donor, the same things apply, the donor will have a say over the research and the data and sometimes you publish in Open Access so that it’s accessible for free.

But to go now into details to say let’s look at the data itself. At the moment we do not have clear guidelines, what is there is for research output. In terms for the data, am sure we don’t have clear policy. When we have collaborative research, when members of the university collaborate with other universities, there are cases where the collaborating university go with all the data generated by both universities and generated in Malawi. Our academics may not even access the data and we are now trying through memorandum of understanding to ensure that those who pass through this office, one of the things that we check is to ensure they insert a clause that provides access to the data. But yes, we have had experiences where the collaborating partners after the research, they go away with the data and even if you want to publish, you cannot access the data even if you want to publish from it even if you were involved in the generation of the data.

***Interviewer:***

*I think what you have said, you have partially answered ahead of me; I want to know the role your university plays to promote sharing of research data? Do researchers share data, that is, across departments, disciplines and with other universities and research institutions?*

**DoR-UNI1:**

To be honest even at university level, I think, I doubt if there is any sharing of data collected by one particular study in the same department, faculty and even university. I really doubt but the reason is that we do not have a mechanism where after collecting data, you can deposit so that other people can access and use that data under certain terms. So, I think, and I know that the departments, staff, faculties have collected a lot of data even myself but just keep it because I do not know how to share and where. For example, in one project, we collected a lot data for the project and I only published one paper, one person approached me and I allowed him to use that on condition that I should be included as a co-author. This person was supposed to go to the same places I went to collect data and he was told that the same data he wanted to collect, was already collected through my research project, why don’t you just go there and talk to him? So he came and I allowed him to use my data under the terms I have already mentioned.

So the point I am making is that as a university we do not have a mechanism that number one, here is the data, you should know that this data already exists then this is how you can access and this should be true for our students as well.

***Interviewer****:*

*Way forward on data sharing?*

**DoR-UNI1:**

Being a new concept, to be honest, yes, we may need to do some background work to see and get awareness so as to get our academics aware about sharing of data. As I said this is new and people, in my view; this study may help. You know it’s one thing to share a publication and something else to share data meaning data is valuable than the publication itself. As an office we need to change the perception so that researchers at UNI1 start looking at data the same way they look at research publications. To say if I share my data under certain condition and its okay!

***Interviewer:***

*But now do you think researchers at UNI1 be willing to use the data that has been previously generated by other researchers or research institutions?*

**DoR-UNI1:**

I think so because we just need some procedures and procedures. If we set up procedures and everybody knows that I know you are using my data, if there are any issues, for example, if you are using it I should be cited or acknowledged. If we put those things in place, am very sure people [researchers] will be using data. Yes, we collect a lot of data but not all of it is used. You see another thing is you can collect data and another person collects data but you know when you combine the two sets, you can come up with rich discovery. So to me it’s a matter of coming up with the procedures that if you want to use this data, you have to acknowledge, I am very sure members of staff will start reusing data.

**RESEARCH DATA PRESERVATION PRACTICES**

***Interviewer:***

*Since you have acknowledged that UNI1 staff produce a lot of data, if the university wants to embrace data preservation, do you think the university has enough infrastructure?*

**DoR-UNI1:**

At the moment, the answer is no, we don’t have but what I can say is that we have plans and I would like to link to link to efforts that are under way. I think we are at the advanced stage of establishing an ethical clearance committee. Now, as part of that system, we will not only be collecting proposals, we are going to create a database for proposals and when people go out to do their research, they will also be submitting reports including data. So, we are planning to put in place mechanism where we can keep our data and this will be the entry point for data sharing; we will put it as a requirement that deposit your data as well and make those procedures for re-use. And as we build the database, I think the infrastructure will be available but at the moment we have limited infrastructure, researchers are only using office computers and their personal laptops. In the meantime, we will collaborate with the library, we will come up with a system apart from depositing research publications, and data should also be deposited. After carrying out research approved by the university ethics committee, researchers will be required to deposit their data in this particular database.

**COMPETENCIES IN RESEARCH DATA MANAGEMENT**

***Interviewer:***

*Do you think your office will play a role in instilling research skills in the area of research data management? If yes how? And if no, why?*

**DoR – UNI1:**

So I think the way we have been operating is that when it comes to issues of databases, the directorate works hand in hand with the Director of ICT at UNI1, we give them our requirements and they are the ones develop the systems on our behalf; they develop the prototypes and when it is implemented, we will work with the ICT directorate in training users. Of course this office will originate the campaign awareness and we will fund to make these things known by researchers. In short, the directorate will fund these activities meaning it’s my office that is responsible. So, yes, we will fund training for researchers.

**FACTORS AFFECTING MANAGEMENT OF RESEARCH DATA**

***Interviewer:***

*What are the factors that affect or you anticipate will affect research data management at UNI1?*

**DoR-UNI1**

I think the first that I immediately think of is the one that I have already highlighted, its new issue, so buying this idea by the people who are generating data and accept the concept of sharing will require a little of some effort: Convincing people that you can use data generated by others and again also convincing generators of the data that they need to share their data just as they do with their publications. I will share with you my experience maybe going beyond this, even data collected at national level, people still don’t want to use it, data collected by NSO [National Statistical Office], very comprehensive data, people will still need to go that district; it’s the mindset actually. So yes, it’s both the user to say I can use data collected by so so, and have confidence that this is quality data, but also the one collecting to accept that you can share my data that may require some efforts. Maybe the other thing is the technical aspects: infrastructure, and the personnel just to manage data; so again, we may struggle there. It may be a challenge because again it’s a new concept, will the library be willing to be engaged on fulltime basis to be managing data?; they are doing it for the repository you know for our digital works, maybe the same person will be assigned to manage data? But data now, is a different thing as it may require different technical expertise. I think beyond that, I know everybody will expect something from use of the shared data. Even for the university, for internal use, we can have some policies but assuming somebody from outside wants to use our data, there we need to be careful because it will be a challenge. I know other institutions which have data which is free but they have data that you have to pay because they are saying because you need very specific data and for us to produce that data, we need to sit down and process it further hence you have to pay. What if the university wants external users to pay for our data but then some may not want to pay because this is a publicly funded institution. But people must appreciate that it’s cheaper to use data already generated than start afresh collecting the data.

***Interviewer***

*How soon will your office start implementing issues of research data management?*

**DoR-UNI1**

Yes, so it’s not a short term issue but a medium term, may in the next three years. One thing is that we are going beyond research output as the main activity of the directorate because we are going into innovation and commercialisation. So, one aspect that we are building in that when are talking of innovation and then commercialisation, some people think we need to come up with designs, that’s okay but the data can be commercialised if it’s of good quality and you know in the new library, we have built in the aspect of data centre meaning if we have the data centre, mechanism and everything, people can start depositing their data, so it’s a midterm but will go with other things that we want to commercialise in the directorate. In the next five years, we will be there, we may start small but will be achieved. .

**ADDITIONAL COMMENTS**

***Interviewer:***

*This marks the end of the interview and thank you for granting me time and space to interview you. But before we close this session, what are your additional comments in relation to the topic I have interviewed you on?*

**DoR-UNI1:**

I did not know this was your area of study, it’s a very good area, I came across this issue in South Africa at a conference and one of the issues we were taught was about research data management. So already, that was sometime back, three years back. It’s something I have been thinking about but you know, you don’t know who else is interested in this aspect. So I think to me I am already convinced from the conferences that data is something that should be well managed, with issues of sharing and re-using; I feel as a university we are losing out.

So lastly, I commend you for choosing this area am I am sure we will make use of this research. We would want to see outputs from this research and I would appreciate if you don’t anonymise our university so that it will be easier to adopt the recommendations from your findings. We may need to see other people who are interested in this area in Malawi so that you can form a team of people in data management so that the concept can be popularised in Malawian universities and research institutions. Thank you.

***Interviewer:***

*Once again, thank you for your time.*

**PART B: TRANSCRIPTION OF DATA FROM DIRECTOR OF RESEARCH UNIVERSITY TWO (UNI2)**

***Interviewer:***

*Thank you for according me and opportunity to conduct an interview with considering that you are every busy person.*

*The study is about how UNI2 manages research data, these issues whereby we can use research data for other studies. We will be using terms such as data curation which is the same as systematic management of research data for re-use and posterity.*

**DoR – UNI2**

Thank you and you are welcome

***Interviewer:***

*How long have been working for the university and what is your key role of your office?*

**DoR – UNI2:**

I have been here for 16 years**.** As a director of research, my duty is to oversee all research activities in the universities making sure that researchers are assisted in grant management, ethical clearance issues, you know they face hiccups and my office is there to make sure these things move smoothly.

***Interviewer:***

*Why do you think research is important?*

**DoR – UNI2:**

In my professional life, research is extremely important not just important in the sense that in academic environment, as academics, for you to progress you need to research. For the college, I think it’s our number one earner of finances, so research is the one that keeps this college running.

***Interviewer:***

*How does the college encourage research and publish in creditable journals?*

**DoR – UNI2:**

At university level of course there are policies that you know give flexibilities to every lecturer to be conducting research. At college level, we make deliberate policies where people are allowed to collaborate with other people and affiliates so that they can be able to conduct research. And if they conduct research and publish, at college level, we reward them, for each publication, we give them USD100 to keep their research going. So those are some of the things but people are encouraged at university and college level. More importantly, as I already said, when they publish, they get promoted to senior positions.

***Interviewer:***

*As a researcher and as a professor, what do you understand by digital research data*?

**DoR – UNI2:**

Digital research data, I understand it as a new concept of course; but I understand it as where researchers from different institutions can share the data as well as you can re-use that data for current and future discoveries. It’s not like the old time when you have your data and once you publish, you destroy it; nowadays, you keep it so that other people can come with another angle to look at that data and new discoveries can come out from that data. Because it is in digital form, it becomes much easier [to share].

***Interviewer:***

*Who owns research data generated by researchers at UNI2?*

**DoR – UNI2:**

Ok, so it’s whenever you are doing research in the university, whether you are using your own money or donor money, the intellectual property rights are of the university because you are using the university name and facilities. So, the university owns that data, the holder of the intellectual rights is the university.

***Interviewer:***

*Tell me, how does your office encourage research data sharing within the university?*

**DoR – UNI2:**

So, mostly in the university there is not really a problem, people are encouraged to share data because we have the data centre at the research support centre, there are people who are employed to specifically digitise and manage the data so that people can have access to it. Nowadays, even researchers are encouraged; it’s no longer that this is my data, you share with other people. But when it comes to international organisations, then we make sure that when signing contracts, the issue of data sharing should be clearly stipulated because sometimes people come here, they collect data and they go away with all of it while they were collaborating with us so we really make sure a clause on data sharing and access is included.

***Interviewer:***

*So you have already said that one of the key ways though which data is shared is through research support centre, do you use other ways?*

**DoR – UNI2:**

Even though we have the research support centre where they [researchers] can capture their data and keep it, it’s on very small scale. We know that other projects have their own databases so we have some units that are also processing data and maybe they do share with their collaborators. This office simply directs researchers to those units but they are in control of those units. However, researchers have to go through my office, the aim is to have some sort of authority. Like I heard these guys are doing research in Malaria, I want to have some access to their data, we do approach the owners. But as a college, we need one central place where data is kept and in most universities it’s actually the library is the custodian of the data.

***Interviewer:***

*What are the ways of sharing research findings in the university?*

**DoR – UNI2:**

Mostly, it’s through publications, people [researchers] publish and they get promoted, we have the annual research conference which is also one way at the college we share the data/research findings.

***Interviewer:***

*So for research projects that the university funds, do you need researchers to give you data in addition to the findings or you just encourage them, it’s not must.*

**DoR – UNI2:**

It’s supposed to be a must because it’s the property of the university. It’s supposed to must be a must that once they have collected the data, they have to deposit it in our data centre but I don’t think the university follows that with people, as for one reason, it’s because the university rarely funds people to do the research.

***Interviewer:***

*So how about for external collaborators? Do you require that the university is provided with the data in addition to the research findings?*

**DoR – UNI2:**

Oh yes, with the outside collaborators, we demand that! Actually in the contract, the intellectual property right is between the two so everyone has got access to that data and can use that data so they are very interested and actually, the reason they come and give findings is because they need the data.

***Interviewer:***

*You earlier on mentioned the important of data sharing in terms of re-using, what are the other benefits?*

**DoR – UNI2:**

Ya, other important aspects, it’s also for the advancement of science, we are doing this for the advancement of science. Also to put the name of the university on the international scene because when we share data with them, they do not just keep it, they use it and people know that the research of this type is happening in Malawi so we can also go there, so this is the reason why countries in Africa are well known for research because we are willing to share our data and people come here with their clinical trials because they know this type of research is already happening in Malawi; since there are not hassles to go there and conduct our research so it’s very advantageous to share the data.

***Interviewer:***

*Does your office or university encourage researchers to use data produced by other researchers?*

**DoR – UNI2**

We really encourage the re-use of data because as a country, we have lots and lots of data which is just lying there and we encourage people especially postgraduate and undergraduate students to use it. You know conducting fresh research is costly but students at that level, at masters and undergraduate, they can just go into database and re-use that data and that becomes much easier, it’s less costly and there are less hassles in ethics clearance. There is data that is being collected and being collected but it has never has been analysed. Look at the data there in the hospital at Queens [Queen Central Hospital], in whatever they do, that’s data collection of the patients but have we ever followed about that? No, we don’t follow. If you go to Queens and say I want to find how many people have come here with rare disease such as Parkinson's disease [a progressive nervous system disorder that affects movement], they will not tell you, because not because people don’t come there with these diseases, but no one has ever sat down to analyse this so we are sitting on rich data. We, are therefore, encouraging people to come and re-use this data because this analysis brings new insights.

***Interviewer:***

*As one of the senior researchers in the university and in Malawi, do you have examples where your students have re-used data?*

**DoR – UNI2**

Yes, for my own students, since I do collect data, I usually have interns who come for maybe three months, so they really use my data. When patients come [it has to be noted that apart from working at UNI2, the respondent like other lecturers at the college use the nearby hospital as a teaching hospital], we do collect their details and keep data in our databases and when students come, we tell students to use such data that is, compute correlation of certain variables for example.

**RESEARCH DATA PRESERVATION PRACTICES**

***Interviewer:***

*Let’s look at preservation, apart from your labs and data centre, do you have other means for preservation data.*

**DoR – UNI2:**

So the way we are doing now is at very small scale and it’s not a sustainable way because researchers keep most of their research data in their laptops and computers and other storage facilities and once these crush, the data is lost. There is no central place where we have really dependable servers. The data is in the labs in the computers; it’s only the research support centre and some departments that have their own databases but do not have proper back-up systems. But we need to really buy our own servers with proper backup systems with an IT [Information Technology] person responsible for data so that whatever you are doing in the laboratory, you automatically send to the centralised data centre so that if you lose your data, you can go to the data centre and retrieve your data. But as of now, I think we are not doing it but I know our affiliates are serious with that, they have got offshore data stores but for the college no, we need to improve data preservation.

***Interviewer:***

*Does your office play a role in ensuring that researchers preserve the data? For either answer, please explain.*

**DoR – UNI2:**

To some extent yes, through the research support centre, we encourage researchers to go through the research support centre but I cannot blame researchers for not using the facility because we have limited capacity at the research support centre; we only have one data officer and we have got so many research projects in the college and the data officer cannot cope. What is supposed to happen is that researchers are not supposed to have their own data managers, so whenever they collect their data, they are supposed to bring the data to the data centre, the research support centre should enter the data so it’s in our databases and researchers can come, collect and analyse their data. But what happens now is that because researchers don’t go through the research support centre, they do their own data entry and they only come if they need some help such as on data analysis or data analysis software installation.

***Interviewer:***

*How about technical infrastructure? Any efforts to ensure that research is preserved for posterity?*

**DoR – UNI2:**

It’s started long time ago but I think it has not moved to certain level. Basically, the infrastructure is not reliable, we have not invested.

**COMPETENCIES IN RESEARCH DATA MANAGEMENT**

***Interviewer:***

*Skills, does your office support researchers in research data management from creation, sharing, re-use and preservation.*

**DoR – UNI2:**

Basic competencies are there. The research support centre has computer tablets that researchers can come and borrow for their research entry, so we are providing such type of services so that researchers are able to get reliable data entry procedures. As I said, we have people who are dedicated for storage, analysis, we have people in research support centre who can do the analysis. My office here coordinates and makes people aware that we have these services.

**FACTORS AFFECTING MANAGEMENT OF RESEARCH DATA**

***Interviewer:***

*I general, what factors are affecting research data management at this college, of course you have already mentioned some. But what are the additional ones?*

**DoR – UNI2:**

Number one, I can say lack of investment, you need good servers and proper back up of power. Number two is also personnel, skilled people who can really, you know, convince researches about good data management practices. Because research is time bound and so you don’t want to involve people who will not do it in the short time that you are conducting that research so we also need to invest in personnel and skills. And as well as, maybe we don’t really publicise the activities that we are doing in the research support centre and its data centre. The awareness part is not really done to a scale that people can be really aware of research services.

**ADDITIONAL COMMENTS**

***Interviewer:***

*Any comments – from creation, sharing, reuse, preservation, technical infrastructure and skills and anything related to this topic under study?*

**DoR – UNI2:**

I think it’s a very important and relevant thing now to talk about data because everywhere now what you hear is about big data, big data so that whenever you are collecting this data, I think you need to think ahead that it’s not just for that moment you are collecting and after analysis then you leave it, you can keep it and that, in the future can be very relevant. So maybe as university we need to understand that and put in place mechanism that we collect data which is good and we preserve it and we can also re-use it so we need to encourage re-use of data. We should not duplicate efforts, with such huge data that is there and I think if we are serious, very few students should be allowed to collect new data because it’s already there.

***Interviewer:***

*Thank you very much for coming just to be interviewed. I expected to last for 20 minutes but it has taken us 22 minutes.*

**DoR-UNI2:**

You are welcome.