

Refocusing Higher Education Research for Sustainable Development

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Abstract

In a world driven by competition in all spheres of life, and in more recent times by competition in development in technology; research has development implications for every nation. The article dealt with refocusing higher education research for sustainable development. It took care of the factors that facilitated the development of research in first and second generation Nigerian Universities, the importance of research to national development and decline of research for sustainable development. The article argues that in order to cope with global competitiveness acquisition of new knowledge through research is almost inevitable as the advancement of economy is directly linked to the performance of its industries. In conclusion the article recommended among others that a more scientific approach to funding research should be adopted. Instead of a statutory allocation approved by senate, funding should be based on needs and capability to utilize the funds judiciously.

Introduction

Higher education in Nigeria is the education given after secondary education in Universities, colleges of education, polytechnics, monotechnics including those institutions offering correspondence courses (FRN, 2004). The goals of Nigeria higher education include to:

- a. contribute to national development through high level relevant manpower training;
- b. develop and inculcate proper values for the survival of the individual and society.
- c. develop the intellectual capability of individuals to understand and appreciate their local and external environments; and
- d. acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society.

From the above goals, Nigerian higher institutions of learning are the most vital places to accumulate human capital in the form of relevant manpower training, abilities, attitudes, skills, research and knowledge creation, for sustainable development of Nigeria.

Research is one of the three core functions of a university (teaching, research and service). Research is the most important of the three. This is because with research your teaching would be more current you would not be using the same notes and same ideas you used twenty years ago to teach students. You would incorporate your research results into your teaching. And of course, research provides services to the community, that is the way you translate knowledge to economic development.

Quality research is capable of enhancing each of the other two core functions, because, research outputs promote national development.

The Role of Research in National Development

Research in the 21st century is no longer all about mere acquisition of knowledge, but now more about economic development. And it does not matter if you call it basic research or applied research, those are just demarcations that are not necessary. Ultimately, it is the basic research that will lead to applied research and this also lead to economic development. So research by whatever you choose to call it must on the long run lead to provision of service.

The current global advanced capitalist development, which took a number of centuries and series of scientific and technological revolutions to metamorphose, did not fall from the sky or even evolved on its own. On the contrary, it was consciously and intellectually nurtured and researched into principally by the Western universities through their triple mandate of producing requisite high skilled manpower, knowledge and related service (Olaofe, 2005).

Research, which is a systematic search and investigation for increasing the sum of knowledge, or its extended version, Research and Development (R&D). The search and application of this knowledge for development of new and improved products, services and industrial process of capital development which, have in recent times, emerged to occupy the main centre stage in the activities of the Western universities. This is understandable because research and development has become the most enduring and effective means of boosting sustainable

economic development and reinforcing competitiveness in the face of rapid growth taking place between industries, countries and peoples in the world (Geuna, 1999).

Bako (2005) Maintained that there is ample evident to show that research and development generated by higher education, more than anything else, has contributed to the rise and expansion of the world knowledge economy. This point explain why the main criteria for ranking the world class universities is not so much on the volume of teaching, students population or community services a university could render. The research output measured by the break through findings published in first class and medal winning journals and books, which could increase to volume and rate of knowledge accumulated.

This development has made knowledge creation and accumulation to be the most important and dominant form of today's capitalist accumulation, responsible for launching the advanced countries to the top of the world by their control of the most advanced social and human capital formation, economic development and improved living conditions.

Consequently, the United States of America, which invests the largest share of the world R & D capital, controls the largest number of world class universities and the equal lion share of the world knowledge economy (Zinberg, 1986, Castella, 1991, Altbach, 1999, World Bank, 2002 & Bako, 2005).

A nation which depends on other nation's advancement in science and technology either lacks the capacity for research or has not given it the proper place in policy measures. Research capacity is defined by UNESCO (2006) as the "aggregate of human, institutional and financial conditions for pursuing research". In either condition funding would be a critical factor. In the first instance if funds are available, where other capacity factors such as human resources does not exist, competent researchers can be sought from the international scene. On the other hand, if government does not give research a proper place in policy adequate fund will not be committed to this course. The institutions may not be able to source for funds else where whether locally or internationally without government support.

University research is the "original investigation undertaken to acquire new knowledge in the natural sciences, social sciences, and humanities" (Millar & Senker, 2000). In order to cope with global competitiveness acquisition of new knowledge through research is almost inevitable as the advancement of an economy is directly linked to the performance of its industries. This performance is a function of advancement in science and technology which cannot be achieved without some research (Okebukola, 2002). Anything short of this would lead to dependence on other nation's scientific and technological knowledge.

The Rise of Research in Nigerian Universities

The main number one function of the first and second Nigerian Universities was not specifically research, yet it would be interestingly to see how it was accommodated and promoted to optimal level and international acclaim. The period between 1960s and 1980s was not only the golden age of university education, but also its research. In fact, it was unanimously agreed by the world Bank, the National Universities commission, the Nigerian academic staff union and industries that employ graduates, that in terms of quality and quantity of research output of tertiary institutions, Nigerians were the best and leading in sub-Saharan African from 1960s to the late 80s (Karani, 1997; Okebukola, 2002).

One yardstick for measuring the research output was by the number and quality of published works authored by Nigerian and co-authored academic in international journals and by the world distribution of active serial titles emanating from the universities, which contribute to the generation, dissemination and application of scientific knowledge for sustainable development in Nigeria and beyond (Cetto, 1998).

Indeed excellence in research and publications have made individual universities to have earned global respect and recognition in specific disciplines such as the university of Ibadan was famous in Medicine, Education, Religious studies and History; Ahamdu Bello was re-known in Engineering, veterinary Medicine, Agriculture, History, Arts and Radical social sciences; Lagos was recognized in Business Administration, Law and Social Studies, and Nsukka was famous in Languages and Literature.

However, evaluation by the NUC's ranking systematic of Nigeria Universities according to the performance of their academic programmes through their accreditation exercises, have radically changed the above picture (NUC quality assurance in Nigerian Universities Vol. 1, 2002).

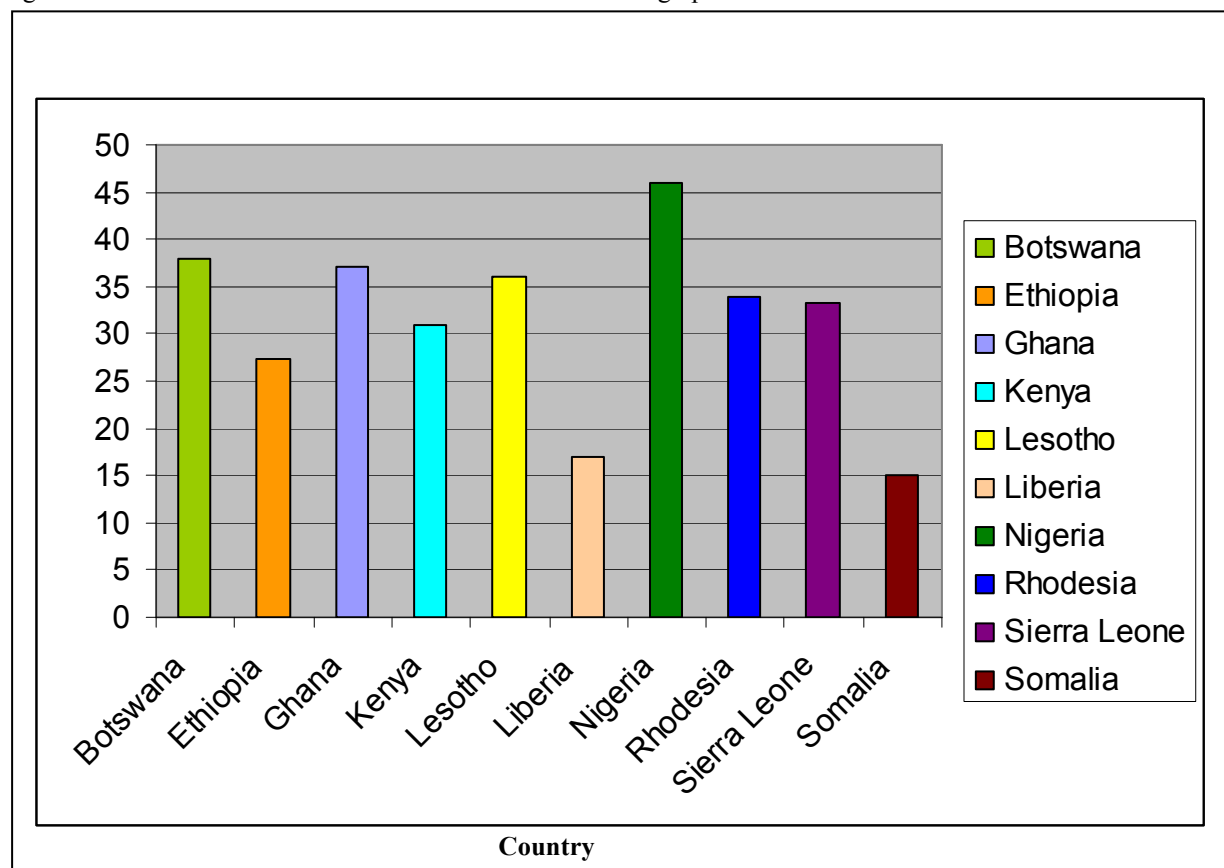
It is important to note that another way for measuring the quality of research output is through academic standard attained by a comparative analysis of the quality of graduates evaluated by labour employers and peer universities. Because of the extensive research carried out by the teaching academic staff and the availability of teaching and research facilities, the Nigerian graduates of the early period were classified among the best in the world. The universities themselves, Nigerian government, employers, World Bank, National universities commission (NUC) and even the academic staff themselves, now nostalgically recall this as the former recently opined;

“By the Mid 1970s the post independence investments in education and university education in particular had created enormous potential for the

country. The expansion of University education occurred with increased quality of instruction recalled in the institutions. Between 1960 and 1980, graduates of Nigerian tertiary were among the best in the European and North American Universities and Nigerian academics proved their mettle that recalled national and international acclaim and recognition. These developments created the actual possibility that Nigeria would realize her destiny as the power house of African liberation and the pride of the black man and woman all over the world (Asuu, 2002)”.

The most important yardstick for measuring the quality and relevance of University education and its research component had been by its level of contribution to the general economic growth, development, prosperity and democratic empowerment of the citizenry.

Bako (2005) maintained that during the first phase of Nigerian Universities, it was observed that the calculations of the rate of returns from investment in higher education were the highest in Nigeria compared to other African countries where the statistics were available. Nigerian Universities yielded the highest rate of return of 46% against 15% the lowest between 1960 and 1980 as shown in graph 1.



Graph 1: The returns to investment in higher education in some African countries in percentage between 1960 and 1980

Source: Adapted from Hinehciffe, K. (1987) Higher Education in sub-Saharan Africa. Crow Helm Ltd. London P. 50.

However, upon the high rate of return generated by higher education, Nigeria was able to sustain a very high economic growth rate development and relative prosperity within the country. The growth rate of the Cross Domestic Product in 1962-63 exceeded the four percent which the National Development plan envisaged by shooting up to 5.7% (National Development Federal Ministry of Economic Development Progress Report 1964, pages 2 & 5).

Favourable Conditions for Increased Higher Education Research

The increased rate of higher education and research could be attributed to a number of favourable conditions that made it possible. First is the colonial inheritance factor, which could be studied under the institutional, infrastructural, personnel and tradition of research, handed over to pioneer colonial universities. The British

colonial masters resisted the demand to establish universities in spite of the national and long years of agitation and demand for them, yet it established a great deal of research institutions right from the 1920s in order to promote its economic, political and social interests and policies in Nigeria. In order to encourage and guaranteed the production and supply of export crops such as cocoa, palm produce, groundnuts, and cotton the British established agricultural research centres at Moor Plantation, Ibadan, Umudike, Umuahia, Samaru and Zaria, where applied scientific research actually made its debut in the country.

Furthermore, virtually all the infrastructural facilities for development of university education and research were also inherited from these colonial institutions. For instance, when the university college started, it had no college, no staff, no library no laboratory, no students but all were transferred from Yaba Higher college to the college of Science, technology and arts in Ibadan. In the same vein, the regional colleges of science, Technology and Arts at Ife, Nsukka, Lagos and Zaria became the nucleus of the Universities that sprang in the regions.

Consequently, the universities also inherited a well trained research Cadre of staff, mostly British and Americans who had conducted numerous researches in Nigeria and outside. For example, from 1962 to 1967, the academic staff of Ahmadu Bello University consisted of 35 Nigerians and 162 expatriates, University of Nigeria 247 Nigerians and 111 expatriates; University of Ibadan 164 Nigerians and 182 expatriates, University of Ife 101 Nigerians and 91 expatriates and University of Lagos 162 Nigerians and 52 expatriates. Out of the total 1,324 academic staff in Nigeria Universities, 724 were Nigerians and 595 expatriates (Fafunwa, 1971). And the rate at which the Nigerianization of the academic staff was pushing, it was estimated by 1980, about 85% of the academic staff particularly in the universities of Ibadan, Lagos, Ife and Nsukka were to be Nigerians (Fafunwa, 1971).

The second very important factor that facilitated the development of higher education research was the overall hand some funding which education generally and universities in particular received from the early post colonial governments of Nigeria. For instance, between 1950s and 1960s the regional governments devoted from 25% to 30% of their annual budgets to education (Yesufu, 1985). Furthermore, out of the total 7.2 million which the Federal Government of Nigeria committed to education between 1962 and 1964, 5.3 million was spent on Higher education (Karani, 1997)

The third factor was the Universities institutional frame work created for research in terms of allocation of resources, functions and time for academic staff. As indicated between seven to ten percent of the budget of the first and second generation universities was specifically allocated to research. There was a clear definition of distribution and operation of university functions as stated in their mission statements, on which research was very prominent. However, in terms of distribution of function, out of 100 percent, it was estimated on the average in these universities 50% was for teaching, 30 percent research, 10% service to the university community and 10% service to the community as in the University of Nigeria Nsukka and other universities (Fafunwa, 1971).

Decline of Research in Nigerian Universities

It was generally agreed that the systematic decline and collapsed of research was started with that of higher education and universities particularly from the late 1980s up to date. Thus, the National supervising agency of the Nigerian Universities the NUC, since the early 1980s noted that:

“in terms of quality and quantity, the research out-put of tertiary institutions in Nigeria was about the best in sub-Sahara Africa up to the late 1980s (Karani, 1987). The wherewithal for research surely as good research training and motivation, availability of equipment, and good library facilities pre-dominated, with the onset and acceleration of the decay in the system, these ingredients faded away. By 1996, the quantity and quality of research had declined to an all-time low (Okebukola, 2006).

Summarizing the factors that contributed to this decline from the late 1988 to 1996, and subsequent collapse from 1997 to date, the Nigerian universities commission listed the following:

1. Lack of research skills in the modern methods.
2. Constraint of equipment for carrying out state-of-the out research.
3. Over-load teaching and administrations schedules with the little time for research.
4. Difficulty in accessing research funds.
5. Diminishing scope of mentoring junior researchers by seasoned and senior researchers due to brain drain (Okebukola, 2002).

The number of universities courses and programmes as well as volume of enrolment were to be strictly determined by the Harbison Report, which estimated that from 1960 to 1970, Nigerian universities would need to produce at the rate of 2000 personnel a year in order to cope with the rate of Nigerianization.

Accordingly, Fafunwa (1971) maintained that Harbison report did not underrate the importance of research, as it

stated:

“It should be the duty of Nigerian universities to promote work and research in the field of African studies, and recommended that every university in the country should have an institute of African studies, such an institute could coordinate research which was being conducted by various university departments”

Phases of Research in Nigerian Universities

The research pattern went through two phases according to the development of higher education and universities in Nigeria. In the first phase, research was recognized and conducted, but was subordinated and intended to improve the productivity of labour and its specialization, and to a lesser extent contributed to solving the societal problems. In the second phase, it is when the quantity and quality of University based research has since the late 1980s begun to decline gradually to the current level of collapse and virtual disappearance.

Bako (2005) observed that over 99.5%, if not all 100%, of the Nigerian university activity and time are devoted to teaching and assessment of students through out the year, without definite official time designated for doing research. He maintained that those that must do research could only do so by “stealing” time out of teaching, or their spare time, or leave, if they manage to secure it.

Furthermore, the decline of university education generally and research particularly has been reflecting the degree of chronic under funding which they have been subjected to in the past one and a half decades. It is essential to point out that while the number of universities and students’ enrollment have been expanding from six universities in 1962 enrolling 3545 students to 37 enrolling 350,000 in 1998 and in 2005 to 84 universities (54 public universities 26 Federal and state 28 and private 30) with about 800,000 total student population, the percentage of the National budget allocated to education and universities has been steadily declining from an average of 30% in the 1960s, 15% in the 70s and 80s, to 6% in the 1990s, and to less than 3% in the 2000s (Ukeje, 2002; Obikoya, 2002; president report to the 12th NDC of ASUU, 30th September, 2002 in the National Scholar, ASSU publication). Consequently, the official figures of the research grants allocation made to the university according to the NUC between 1987 and 2003 could be described in the absence of a better terminology but just as official distortions contained in table 1.

Table 1: Research Grant Allocation and Releases from 1987-2003

S/No	Year of Releases	Allocation	Amount Released (Naira)
1.	1987	12,776,000.00	12,776,000.00
2	1988	20,000,000.00	17,237,875.00
3	1989	20,000,000.00	20,000,000.00
4	1990	24,000,000.00	22,075,371.00
5	1991	51,266,530.00	16,645,034.00
6	1992	14,500,090.00	17,472,972.00
7	1993	122,182,102.00	122,182,102.00
8	1994	132,213,817.00	98,662,255.00
9	1995	155,534,575.00	73,973,806.00
10	1996	153,842,000.00	50,583,686.00
11	1997	194,013,732.00	122,020,447.00
12	1998	215,618,453.00	149,993,549.60
13	1999	302,735,543.00	183,501,468.00
14	2000	448,127,780.00	612,666,910.00
15	2001	206,410,910.00	206,410,619.00
16	2002		
17	2003	73,435,618.00	73,435,618.72
	Total	2,146,657,150.00	1,799,637,713.32

Source: Okebukola, 2004 “strategies for Stimulating Research and development in Nigeria universities”, in Nigerian university system chronicle 12 (2) 17-18.

However, going through table 1, distinction could be made between research grants allocation and the actual releases, as well as between the actual releases and direct research utilization by the universities. Subsequently the research bulletin produced by the National university commission, indicated that out of the total fund budgeted for research between 1999 to 2000, less than twenty percent were actually allocated to the NUC by Government, while out of those funds, less than 50% were actually allocated to the universities, and out of this allocation less than 3% of the money was utilized for research.

Indeed, because of the shortfalls the universities have been experiencing in the payment of salaries and maintenance services, the bulk of the research grants were vied for these purposes. This is why most of the Nigerian universities find it difficult to account for the research money received.

(Research Bulletin, NUC, January, 1997-2000).

As indicated in the NUC, Research bulletin, 1997-2000 chapter 2, that less than 10% of the academic staff in the Nigerian universities received research grants in the past one and half decades. Thus, even if the total actual research grants were to be utilized by the universities for research purposes only, only ₦50,000.00 could have each staff received per year between 1994-1996 at university of Ibadan and ₦33,291 for University of Lagos, ₦66,179 for University of Nigeria and ₦65,000.00 for Ahmadu Bello University.

Thus, from the foregoing, it is clear that the bulk of university based research has been self funded by the graduate students, staff-in-training and academic staff.

What then is sustainable development?

When it comes to definition of this area, there are both misunderstandings and disagreements. The most famous definition of sustainable development was provided by the United Nations commission on Environment and development (the Brundtland Report, 2003), which defined it as a sustainability that 'meets the needs of the present without compromising the ability of future generations to meet their needs' (UNWCED, 1987). Whilst this definition has been widely copied, it was a product of compromise, largely because of an international reluctance to accept a reduction in economic growth in order to achieve environmental sustainability. Such interests were then accommodated by the argument that sustainability could be achieved by and through economic growth, now heavily critiqued (Daly, 1996; Hamilton, 2004, Jackson, 2009), as increased growth and consumption habits are now seen as principal causes of unsustainability.

Consequently, another useful definition was contained in a UNESCO report which suggested that sustainability is not a fixed notion, but rather a process of change in the relationships between social, economic, and natural systems and process (1997). In arguing thus, it suggested that an appreciation of sustainable development; and therefore of an higher education research for sustainable development; required an understanding by higher education administrators of the complex interrelationship between three different kinds of sustainabilities- the environmental, the social and the economic.

Indeed, this view is encapsulated in the Venn diagram described by Shallcross & Robinson (2007), sustainable development being that space where these three areas overlap (Figure 1). Furthermore, the report also went on to argue that 'there can be no solution to environmental problems unless the social and economic ills besetting humankind are seriously addressed (UNESCO, 1997).

Environmental sustainability then is increasingly affected-

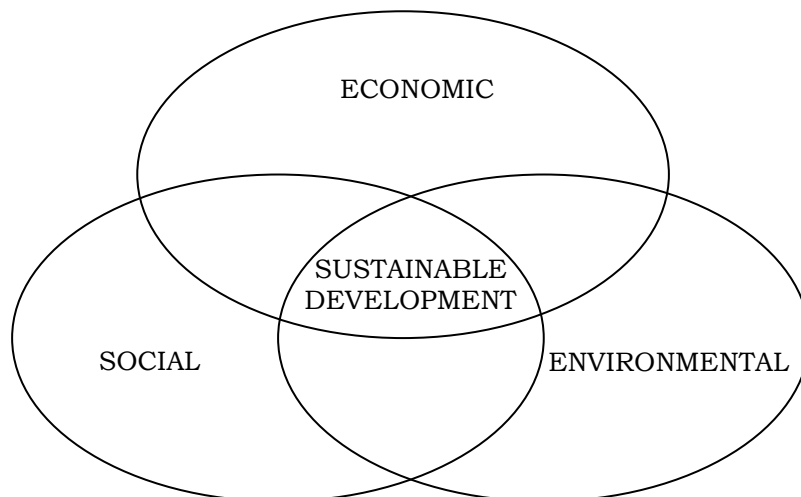


Figure 1: Sustainable Development as a Venn diagram

dependent upon-the economic and social actions of human beings, and humanity then has enormous responsibility for the natural environment, with politicians, citizens and higher education administrators of all kinds beholden in promoting its good stewardship.

Sustainable development connotes the ability to keep going and keep up the progress made in various segments of the society. According to Soubbptona (2004), for development to continue indefinitely, it should balance the interests of different groups of people, within the same generation and among generations, and do so simultaneously in the economic, social and the environmental dimensions of life. Thus, sustainable development is not only concerned with economic growth, but also with equitable distribution of the national wealth through provision of employment, security, education and health.

Conclusion

In the knowledge driven 21st century, higher education research should be refocused to be the key driver of socio-economic transformation.

Research stands for the process of finding out what is and what is not. In human existence, there are numerous phenomena as well as many variables of parameters.

Research connotes a systematic objectives and thorough investigations of a problem with a view to discover a relevant information for sustainable development.

Research is the only source for generating and advancing the frontier of knowledge, skills training and expertise for man power, and therefore, the most important factor which, facilitates and accelerates economic development for sustainable and improved living conditions in society. Development is concerned with the transformation of the individuals, households, communities, private as well as public institutions through human beings who will in turn ensure that available resources are properly managed and directed towards societal improvement.

Recommendations

The traditional non knowledge based economic sectors have continued to progressively shrink, the knowledge based industries have not been growing and expanding due particularly to the collapse of research and development in the Universities and research centres. Therefore, in refocusing research for sustainable development the following recommendations are made.

1. Research as purely an affair of acquiring higher degrees by students and promotions for university teachers should cease and be subordinated to national research priorities and goals. The practice of conducting research from the perspective of disciplinary and scholastic perspective should give way to community/state/private sectors driven, strategic and problem solving in the country.
2. Government should allocate 26% of her annual budget to research and development, because breakthroughs in research and development constitute the foundation of the competitive advantage of countries in today's knowledge driven world.
3. Nigerian universities should retrain the surplus manpower in the country and use it productively, or repackage it and make it part of the Nigerian exporting earning items in its trade with other countries.
4. Universities research should be based on capital investment that must yield high economic returns through the generation, dissemination and application of knowledge to specifically address and resolve such national problems of underdevelopment, mass poverty, corruption and institutionalization of democracy and good governance.
5. Investment in research should be viewed as a development issues and not just academic exercise.
6. Government should encourage industries to give researches and consulting jobs to universities and to support university research.
7. A more scientific approach to funding research should be adopted. Instead of a statutory allocation approved by senate, funding should be based on needs and capability to utilize the funds judiciously.

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