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CO-OPERATION AMONG UNIVERSITIES, INDUSTRIAL RESEARCH ORGANIZATIONS
AND INDUSTRIES IN GHANA^{1/}

by

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CO-OPERATION AMONG UNIVERSITIES, INDUSTRIAL RESEARCH ORGANIZATIONS AND INDUSTRIES

The need for Industrial Research by Universities for the acceleration of economic growth, especially in developing countries cannot be over emphasized, and it is gratifying to note that this has been realized especially by all the newly independent countries of Africa, and as a result of this industrial research is receiving prominence in their national economic development programmes.

Before the Independence of my country in 1957 there was only one University; and the only well equipped research institute we had was that of the West African Cocoa Research Institute, because the then Gold Coast, now Ghans, was the biggest cocoa producing country in the world at that time. In the same way there were only a handful of industries belonging to the local people or the indigenious. Most of the industries in existence at that time were either private owned foreign industries or multinational ones, and these industries had their own research units attached to the industries, or depended on the parent research units back home for their research work. In some cases there was no need for research because the industries were using laid down common formula to process available raw materials to be exported to feed the factories of the foreign industries at home. The aim of industrial set up in those days was not geared towards economic independence of the then Gold Coast. Although there were quite a number of the local people working in some of these foreign factories as well as in their research institutes yet they were not made to know the important role research plays in setting up industries or its contribution to efficient running of the existing ones. From this brief account one could see that Universities and Research Institutes set up in many African countries including my country, with the view of helping industrialization in our respective countries, are young and cannot be compared with those in developed countries with all the necessary amenities, and financial assistance from industries and foundations.

As I said earlier on there were only a handful of indigenious industries before my country became independent in 1957. At the moment of the membership of about 450 of Ghana Manufacturers Association, the indigenious manufacturers are only about one third of this membership, and of this number about 80% are people with only formal school education or with no education at all. All they have is money and a desire to speculate. And I must say here with pride that a great number of them are doing better than people with high academic educational back ground.

It has become necessary in this paper to draw attention to the background pictures of early days of Unviersities, Research Institutes and Industries, so as to enable us appreciate the difficulties encountered in the early years in the relationship of these three bodies.

For harmonious and effective co-operation among bodies there was need for respect for one another. trust and tact. Until very recently

the impact made by research on industry in my country was almost nil, this is understandable firstly because the newly established Universities and Research Institutes needed time to plan and execute, and secondly because instead of research taking note of existing industries, and probably build research programmes around them with the view to bringing these industries up to the high level of efficiency and productivity, most of the research programmes were developed with the institutes own set goals, most of them having no bearing on the immediate needs of the people, the country or the industries. For some time most of the work done by these officers was done in isolation, at times just for the purpose of gaining higher academic recognition.

In addition to the above, as one of the factors which militated against the cordial co-operation of Universities, Research Institutes and Industry in the early days of my country, was this question of research officers, who because of their high academic attainment tended to look down on the indigenous industrialists. This was not the fault of the research officers, it is a colonial mentality or legacy. The literate is considered first class citizen in a special class from that of the illiterate. At times this results in the literate treating the illiterate with humiliation, which does not make for co-operation. Quite often research officers complained to our government officials of reluctance on the part of industrialists to accept, use or apply the results of the work done by the Universities and Research Institutes. It even happened at the early stages that some officers came up condemning the qualities of some of the products which have been on the market before these institutes were set up, without coming up with their receipts as to the right substitute for the wrong ones. The approach on the part of research officers at the early stages lacked tact. I remember that about some ten years ago when one of the research Institutes in my country organized a conference for people in industry, government and research, such was the criticisms levelled by industry and research against each other, that it resulted in what I would term a confrontation. I deemed the incident an opportunity to help air out what was on the chests of industrialists and research officers, and the two parties learnt a lot of lessons from the arguments.

For our countries to reap the benefit of research, there is need to involve the indigenous. To get these indigenous people to co-operate with people with academic qualification higher than theirs. the academic people must be prepared to come down to the level of these local people and make them feel good and important. At this level you can get them to go all the way with you.

As one of the people who was industry before independence, and had the opportunity of being on attachment to one of the reputable companies in Britain, "Metal Box Co." for some time, I would say that quite a number of research work which was limited to the walls of laboratories are not the type of work required by our indigenous industrialists in business or those indigenous retired government officials who are aspiring to go into industries.

Before research institutes come up and announce the findings of their research work in local papers as it has always been the case, the result of their work must be tested on a large scale and it must have backing of a simple feasibility study. To some of you present here, this might sound ridiculous and "spoon feeding" of industrialists but knowing what it is in a country that the majority of our local people who are in industries or are prepared to go into industries have very little money to play with, so a research work backed by a very simple and practical feasibility study could be a great incentive and would also help to avoid so many research work lying idle in the files in our laboratory cupboards.

I am happy to say that the teething troubles which militated against co-operation or cordial relationship between Research and Industry is almost over and one of the bodies which helped in achieving this in my country is the body known as Ghana Manufacturers' Association, of which I was one of the founders, and have been its president for six years. Some of the aims of this association is to bring people in manufacturing industries together for the purpose of combining their resources for the benefit of its members. It also aims at fighting for better conditions for manufacturing industries, and at the moment it is the only body recognized by the Government as the body which is consulted by- the Government on matters affecting industries. It comprises of both big and small companies, as well as foreign and indigenious. Occasional lectures and or seminars are arranged for research officers, government officials and University lecturers to talk to the members as some of the means of educating its members, especially the indigenious ones, who, as I have already said, have very little education and require further education. In addition to this, such lectures help to create cordial relationship which makes for easy co-operation.

Touching on the types of contacts industries have with Universities and industrial research institutes I would sayd that this is done through the Ghana Manufacturers as a body as well as through individuals. But I must say here that the Universities and the research institutes need publicity in order to draw more attention of ^{the} people. In this connection I must also say that the co-operation between these institutions and G.M.A. is gaining grounds rapidly, through the deliberate efforts by the research institutes and the Universities. For example, a little over two years ago, I led a team of members of the National Executive of the G.M.A. at the invitation of the Kumasi University of Science and Technology to the University. We spent a whole day visiting the various departments working on research, and later on, had a meeting with the Board of the Directors of the University and the heads of department. This was the first meeting of its kind between University and industry and it was very very fruitful. Through discussions we got to know of some of the problems facing them. They asked for financial assistance which we agreed to give as a group, and also promised to send out circular letters to our members for financial assistance. From the programmes of the Consultancy Centre they were trying to set up, we felt that this university is moving in the right

direction for the promotion of indigenous industries, because effort was being made to develop industries around locally available raw materials.

The second instance was when about six months ago the Food Research Institute had an "Open Week" to the Food Group of Ghana Manufacturers' Association. I being in Food Processing, felt highly impressed, but at the same time felt sorry that there were quite a number of products which were developed but could not be put to production. We therefore suggested to the management that the association would allow them a page in our magazine "Ghana Manufacturer" for some articles on their work. I must say that we all found the two meetings fruitful.

THE AWARENESS OF INDUSTRIES IN MY COUNTRY FOR NATIONAL AND INTERNATIONAL HIGHER EDUCATION INSTITUTION . . .

Industries in my country are just beginning to be aware of National and International higher education institutions and the response and the co-operation are encouraging. Due to my country's export promotion programme, institutions like Ghana Standard Board, Prices and Incomes Board, and Management and Productivity Institutes are helping industries more seriously than before, and if these institutions could get enough money to run these places more efficiently then their capacities would be just enough for the operations of the existing industries.

THE CO-OPERATION BETWEEN UNIVERSITIES, INDUSTRIAL RESEARCH INSTITUTES AND INDUSTRIES AT THE STAGE OF IDENTIFYING INDUSTRIES LONG AND SHORT TERM NEEDS

Of late some of our civil servants who have gone on retirement and are interested in going into industries, are taking advantage of the help these research institutes can offer. The research officers help them in identifying the long and short term needs of the industries they are interested in.

SUITABILITY OF CONSULTORY SERVICES, TRAINING, AND RESEARCH FACILITIES PROVIDED TO INDUSTRIES BY UNIVERSITIES AND RESEARCH INSTITUTES

Apart from the Management and Productivity Institute, the Universities and the Research Institutes are not catering for training as such, but they do take on one or two on request by industry. The demand for research from industries are not very great because most of the big and the medium size industries have their own research units, and it is only some of the indigenous industries which depend on them. The only Institute known for running regular courses for industries is the Management and Productivity Institute.

WHAT DO INDUSTRIALISTS EXPECT FROM UNIVERSITIES AND INDUSTRIAL RESEARCH ON NATIONAL AND INTERNATIONAL LEVEL?

Industrialists expect the Universities and Research Institutes, first and foremost, that they should come down, put stop to theory and give priority attention to working on local raw materials to be used by industry as substitutes for the imported ones.

They should put the country and the needs of her people first in their programmes and count the success of an industry as the result of the use of their research a better and more living reward than adding more academic letters to their names.

As I have already said, that majority of the indigenous industrialists, who are being called upon by their respective Governments "to catch the commanding heights" of their countries economies, started with handicaps so one must not expect too much from them; instead of this, their problems and ignorance must be appreciated, and tact used in getting them to accept and use research results. After all what is the use of research if the results cannot be put to use to benefit mankind? They must remember that the largest consumer population of research results are the local or the indigenous people. At this stage I would like to draw the attention of our engineers to fabricate suitable machines, locally for manufacturing equipment, taking local environment into consideration.

PROVISION FOR INPLANT TRAINING

There is not much being done in this field by the Universities for industries in my country.

HAVE INDUSTRIES THEIR OWN TRAINING PROGRAMMES?

Almost all the large scale industries and some of the medium-sized ones have their own training programmes with full time paid staff, but occasionally lecturers are invited from Research Institutes and Universities to help.

It has been realized that the small local or indigenous people cannot afford this sort of facility individually, so Ghana Manufacturers' Association in collaboration with the Government of Ghana, has attached a Technical Unit to the office of the G.M.A., and one of the functions of this unit is to run regular courses for the employees as well as the industrialists who are the members of the association. It will also serve as consultancy centre for the members of the G.M.A.

DO INDUSTRIES HAVE THEIR OWN RESEARCH FACILITIES?

Quite a number of the large scale industries have well equipped research facilities with qualified people to run them. Although most of the medium and small scale ones do not have quite as well equipped research units like large industries yet one thing is common, and that is most industries have research units with basic equipments for simple research work or for testing purposes.

The research facilities provided in these industries are fully utilized, because they are provided specifically to meet the need of the industries concerned.

WHAT TYPE OF CO-OPERATION EXIST AMONG INDUSTRIES IN YOUR COUNTRY?
DO INDUSTRIES USE EACH OTHERS FACILITIES?

There is a remarkable and an interesting co-operation between the industrialists of my country, especially those who belong to the Ghana Manufacturers' Association, but this is not in the field of the use of others research facilities.

Industries in my country are going through a very trying period. There is an acute difficulty in getting foreign exchange; so our raw materials are purchased through licencing system. by this I mean industries are given yearly allocation of import licence, and quite often export delays cause factories to be closed down. At times it is only a question of some few ounces or pounds of chemicals; when such problems arise industries in the same field help each other freely.

With regards to the second part of the question, the answer is, this is not the normal practice but it could happen when an industry runs into difficulty.

WHAT TYPE OF CO-OPERATION EXIST AMONG INDUSTRIES OF YOUR COUNTRY AND
INDUSTRIES OF OTHER COUNTRIES

As I said earlier on, before independence majority of the industries in existence were the big foreign ones which depended very much on their parent companies in research and training. This co-operation is still prevailing. Quite often these big firms send our local people to be trained by their parent industries, or to have some special research work carried out for them.

At times too, some foreign engineering firms help to train local people for the servicing of machines they sell to industries.

With regards to consultancy services, training and research facilities to other countries, I would say that this again is done very much by the foreign firms. They do this when they go out to start their branch in another African country, for example Fire Stone (Ghana) Limited starting another industry in Lone, Togo. All the training and research work are first done in Ghana before the commissioning of the project in Togo, and after the commissioning the co-operation is kept up.

At this stage I should like also to mention that my company had the opportunity of providing, training and consultancy facility to some industrialists from Sierra Leone, Mali, and a negotiation is now on the way to take on a lady from Uganda.

What usually happens is the interested party writes to my company for a help to start an industry in our field. Upon the receipt of the request we write to tell him how long the exercise would take and what it would cost him to stay in Ghana. We do not normally charge fees.

THE ROLE OF UNIDO IN ESTABLISHING INTERNATIONAL CO-OPERATION AMONG INDUSTRIES, UNIVERSITIES AND INDUSTRIAL RESEARCH INSTITUTIONS

UNIDO as the international body responsible for industries throughout the world, is the only body which is capable of helping to bring about, not only co-operation among Universities, research and industries but get the governments to understand the problems facing these three bodies and co-operate with them.

The biggest problems facing Universities and Research Institutes are finance and equipments. Lack of these render most of the work being done by research fellows incomplete and unacceptable to industry.

For effective co-operation between Universities Research Institutes and industries, research must be made to provide industries with work which is tried on a large scale, as the result of work done on a small scale might not be the same as the work done on a large scale; this might be due to the fact that conditions for large scale production might vary very much from the conditions under which small scale work is carried out. The solution to this problem is that research institutes and Universities should have pilot plants to try their results and if possible cost the production as well.

At the moment there are enough Research Institutes, and Universities in my country which if given enough financial assistance and equipment could render all the services required by industries in my country. I think this is something UNIDO could look into.

UNIDO MUST ALSO COME UP with programmes for the manufacture of industrial plants locally. Before this is done, effort should be made to examine the existing industries in the country so as to know, where to start from and how to go about the programmes. The question of shortage of technicians should also be seriously considered by UNIDO.

WHAT GHANAIAN INDUSTRY CAN OFFER TO THE UNIVERSITIES, INDUSTRIAL RESEARCH INSTITUTES AND INDUSTRIES OF DEVELOPING COUNTRIES

With proper co-operation, Ghanaian industry can do a lot to help Universities, Research Institutes and other developing countries in the following fields:-

1. Financial Assistance:-

If industrialists of my country are convinced that the work being done by these bodies will have direct effect on their existing operations, and would help them to operate more efficiently, increase productivity, improve quality and presentation for better turnover they will not hesitate to go in all the way to help financially.

2. Use of equipment by research fellows:-

In the absence of pilot plants attached to Universities and Research institutes, some industries, especially the small ones could help research fellows to have the use of their plants in testing new products developed. My company had the opportunity of rendering such services to one of our Universities and Food Research Institutes.

3. Sharing of ideas:-

Close co-operation between research fellows and industrialists would make for enrichment of ideas for the industrialists as well as the research fellows.

4. Provision of facilities for on the job training:-

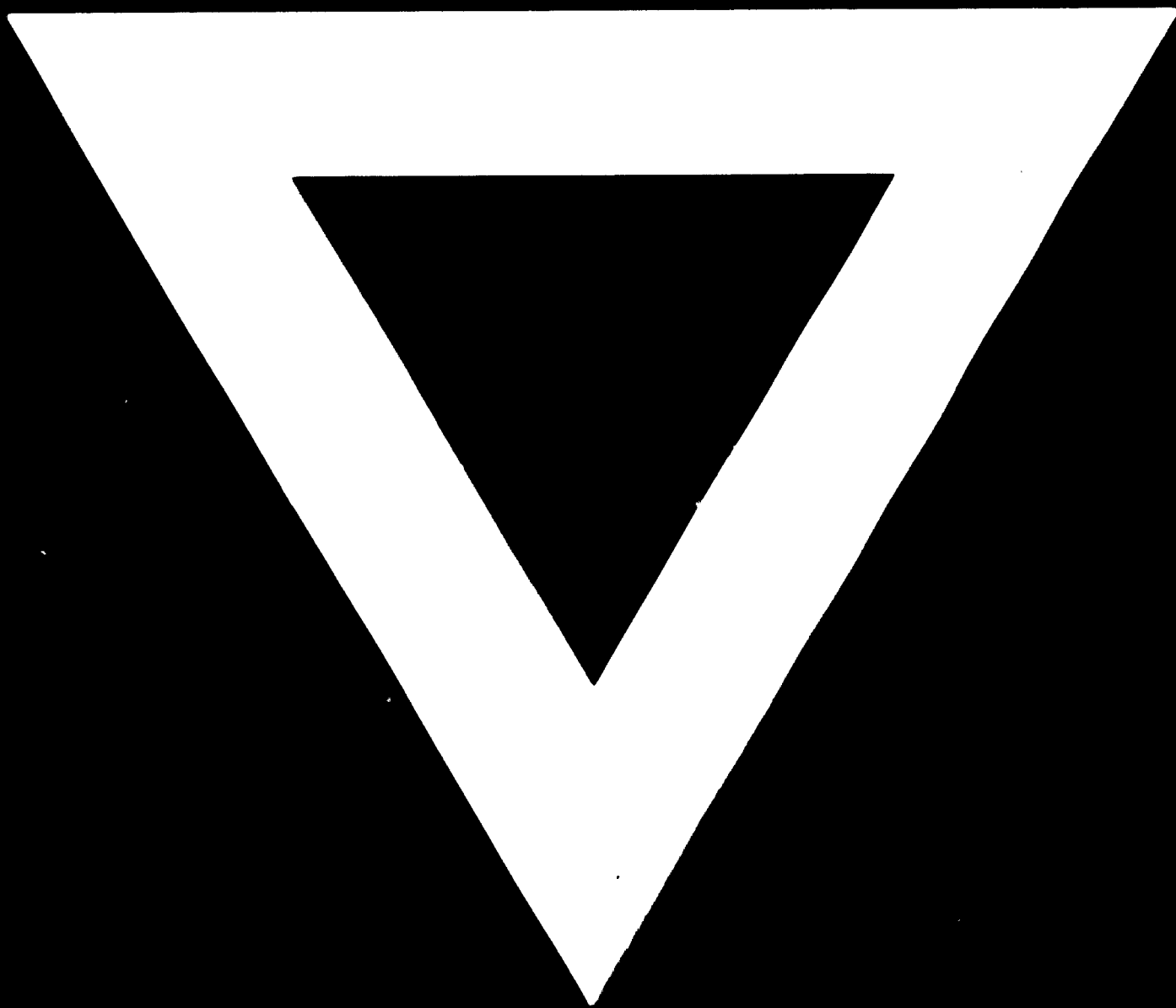
These industries could help by taking on technicians for training on the job as part of their training. Such an opportunity would add very much to their competencies after training.

With regards to What Ghanaian Industry can offer to the developing countries, I would say that Ghana stands a very good chance in the sense that Ghana has lots of "know how" in the field of industry because we have many industries especially, that of indigenous, and if only other developing countries would be receptive to Ghanaians, Ghanaian industrialists could team up with local people of their developing countries on setting up industries in the same way as Ghana had people from developed countries in helping to industrialize our country. I am happy to say here that this is one of the aims of ECOWAS (Economic Community of West African States).

In conclusion, I would like to say that the fate of the economic independence of all developing countries are in the hands of research fellows in our Universities, Research Institutes and Industrialists. Our countries are looking to us to win this independence. You may therefore let us close up our ranks and work as a team, having respect for one another and trusting each other.



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