Mobilising Financial Resources for Science:

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The title of this presentation was probably inspired by the fact that funding to the CGIAR has plateaued in recent years – if not in nominal terms which is on a very slight upward trajectory. Certainly, in real constant dollar terms funding is falling, and what is probably worse the quality of funding has deteriorated dramatically with the ever increasing shift toward restricted funding.

The concept of resource mobilisation comes from the military arsenal of ideas and vocabulary along with concepts of strategy and tactics. The Prussian military strategist, General von Clausewitz, is credited with developing modern theory and practice of resource mobilisation. He emphasized that success – defined to be successful achievement of aims using available resources is only possible through effective resource mobilisation, but that this is secondary to strategy.

Sound strategy must come first, otherwise how would a military leader know how to mobilise resources – i.e. how would he fill his war chest, raise an army and deploy his troop?. Intelligent resource mobilization is necessary but not sufficient to win a war.

Hence, the first key message to the CGIAR is "define a sound and convincing strategy and communicate it well" – only then will effective resource mobilisation be possible and productive.

I would also like to ask – "What is the purpose of mobilising resources?" The title I have been given – "Mobilizing financial resources for science" would imply that the simple answer to the question is "to do science". Here I cannot fully agree. I thought that the CGIAR existed to fulfil its mission which is:

> To achieve sustainable food security and reduce poverty in developing countries through scientific research and research-related activities in the fields of agriculture, forestry, fisheries, policy and environment (Science Council, 2005).

The reference to science in the CGIAR's Mission statement is only used as a descriptor of the research actions envisaged – it is a means to an end, a way of attacking the mission.

An Army General would have far more success in obtaining resources if he said he needed them in order to repel invaders and bring peace and prosperity for the citizens of the nation, He couldn't just say he needed resources because all big Generals need to have big armies!

This is true for the CGIAR – fundraising to do science is nearly impossible – fund raising to help win the war on food insecurity and poverty is not easy but can be done.

Resource mobilisation consists of two elements – resource acquisition and efficiency of resource use. Put simply "The resources you have combined with how well you use them" –

Some may recall the biblical "parable of the talents" – where a master gave a number of his stewards an amount of money (talents) and charged them to use it wisely – one spent it, one

invested it and gained interest and one buried it for safe keeping. When the master returned he punished the spendthrift, praised the investor, and took the resource from the hoarder and gave it to the investor. The hoarder felt badly treated, he had kept the talent safe after all and – ah said the master – but you didn't put it to good use. The lesson is mobilise your resources wisely – get a good strategy – use it or lose it - "to him that hath shall be given – and from him that hath not shall be taken away".

There's a lesson here for the CGIAR.

I'd like to take a closer look at these elements of resource mobilisation with reference to 2 CGIAR Centres:

Fund raising – the case of IFPRI

At IFPRI they take fundraising seriously – but in the tradition of General von Braun (sorry von Clausewitz) they put strategy firmly first. They have a clear research strategy and associated research agenda that they keep relevant through constant debate. They treat their strategy as a living document which is formally updated every 2-3 years – this gives them high manoeuvrability – to use yet another military term.

At the strategic level which includes ex-ante peer review led by the General and Senior Personnel they pursue unrestricted funds and large grants for the big strategic themes.

At more operational level they have decentralised fundraising. Tactically, the lower ranks, Sergeants and Privates (researchers) are encouraged to raise their own funds in programme areas consistent with the overall strategy. This gives them ownership of the work and is a powerful incentive – not only for raising more funds, but also in their efficient use – or stewardship.

In practice IFPRI treat fundraising as an integral part of their work – not as a chore. They treat it as an investment of time and effort and add value and relevance to their research by productive dialogue with partners, policy makers and investors. But they don't do this in a haphazard way – you won't be surprised to learn they have a small command and control unit at Battalion HQ which constantly scans for resource mobilisation opportunities. This provides intelligence to researchers about which donors may potentially be interested in their ideas.

IFPRI "invests" precious unrestricted funds as a means of mobilizing even greater funding and interestingly feels that once unrestricted funding falls to around 30% there is no spare capacity to employ this tactic – in effect there is an in-built limit to growth. Is this an effect we are seeing at system level due to falling unrestricted funding – remember the parable of the talents ""to him that hath shall be given – and from him that hath not shall be taken away".

Let's now turn to the other half of resource mobilisation – efficiency of use – and we'll move from military analogy to aeronautics.

Efficienct use of funds – the case of IITA

In order for an aeroplane to take off and fly the force of lift must be greater than the gravitational force which is a function of the total weight of the plane plus the force of drag caused by the aerodynamics of the plane and air friction. Friction between the wheels and the runway add to the drag.

Efficient use of funds through productive and impact-producing research provides the lift which has to overcome the twin forces caused by the weight of Centre administration and the drag of CGIAR bureaucracy. The plane will take off and fly higher and faster with less weight and less drag – and if these are too great it will struggle to get off the ground at all!.

IITA has created systems that aim to minimize both weight and drag and received praise in its recent EPMR for making an excellent job of mobilising resources and delivering impact. Over the past few years they have created a structure that has greatly cut scientific bureaucracy; they flattened the hierarchical structure and they de-centralised authority. I'm not sure if they use the subsidiarity principle so often referred to but it may be an example of it.

They have outsourced services, restructured personnel contracts, and have linked the different units of the Centre together more effectively and productively. As in many organisations, including my own, they have followed the motto of "doing more with less" –although this sounds implausible, you really can surprise yourself when there is no other option but to do "more with less" – but you have to be creative, think in new ways and take risks.

They have tried to position themselves to greater effect within the global research for development architecture by tapping into Advanced Research Institutes for the science they need but can get cheaper and faster from the experts. At the other end of the spectrum they closely engage with National and Regional systems for the adaptation and delivery of their research products.

By keeping their plane lean and clean they have minimised those parts of weight and drag under their control, and greatly increased the force of lift. What they have found is that by flying a smarter, faster, more energy efficient plane they can go faster, further and carry more passengers – they are doing more with less and due to increased demand they have increased their business. Passengers (or donors in this case) find efficiency attractive and this in turn has brought in more resources – the opposite is also true, inefficiency turns people away.

Yet again. "to him that hath shall be given – and from him that hath not shall be taken away".

So actually, doing more with less can turn into doing much more with less less! (this is not a typographical error).

However, I just want to push the analogy a little further. Some of the factors affecting how a plane takes off are not under the control of the pilot or the airline. Factors such as runway surface affects friction and drag. Air temperature affects air density and therefore the force of lift generated at any given ground speed, as does altitude – that's why in La Paz where the airport is at over 4,000 metres above sea level some planes can't even take off after 10 in the morning. These uncontrollable factors could, from a Centre perspective, be likened to the drag effect of the CGIAR system.

I don't want to go into detail, but the CGIAR really does need to take stock and look at how much of the drag is really necessary and how much is unproductive. The total cost of this AGM will come to around $10 million – if this creates $10 million worth of value then it has broken even – but it does not represent good stewardship, what is the opportunity cost of that investment if used for a more productive purpose? Parable of the stewards and their talents again!

There are many other examples across the system, of seemingly non-value adding or value sapping costs - maybe its time to get a grip. Just as donors may not find inefficient Centres attractive when making investments, they also look at the system level when deciding which

sectors to support. Could it be that the funding plateau we find ourselves on is an indication that the CGIAR has hit a natural ceiling – is there just too much drag to fly any higher?

Global Public Goods and the New Public Finance

I would like to finish with a couple of ideas drawn from emerging thinking on GPGs and new ways of looking at public finance.

The CGIAR prides itself on producing high quality Public Goods. Thousands of research projects have been seriously analysed and documented which demonstrate without a shadow of a doubt that our research produces high rates of return, with typical mean ranges from 40 to 80%. Unfortunately these figures do not set the pulse racing of the average financial decision maker sitting in London or Brussels or Washington.

This year's World Development Report on agriculture (World Bank 2007) is a fantastic weapon in our arsenal to mobilise resources – it makes a spectacular and repeated case for more resources for agricultural research – but I wonder if we will use it to full effect. I wonder if those who control the funds will really sit up, take notice and reach for their cheque books.

One reason why it's difficult is because the CGIAR is in a difficult business.

It is a known fact that Public Goods, and especially Global and International Public Goods are undersupplied – (read underfunded). You may think that being in the GPG business is a virtue – think again - it could well be quite the opposite, it might be a curse which puts a limit on CGIAR growth.

With Overseas Development Aid (ODA) stagnating, donors have no option but to prioritize between and within global, regional and national efforts. Even though it is known that agricultural research can yield huge benefits to society and can contribute to poverty reduction and greater food security. No one has estimated what is the right amount or composition of international agricultural research, nor how much is needed in relation to national investments, nor how to maximise synergies between levels.

This affects funding because whether poverty is reduced, or not reduced, will depend on actions and decisions at the national level and the default will always be national. The case for the complementary role of GPG research needs to be persuasively made to maintain the interest of donors and to bring in new ones, including developing countries that should benefit most.

Yet we now recognise that the most pressiong problems of humanity are global and will continue to need public sector support. Seven years ago Jeff Sachs made a speech to the CGIAR and said:

> "…international public goods are not just a nice thing that we need to add on. They are the fundamental thing that's been missing from our template for the past 30 years"

Was anyone really paying attention? Did anyone realise the implications this has on CGIAR funding?

And as Summers told the United Nations Economic and Social Council in 2000:

> "…global public goods need to have a much more prominent place on our development agenda than they have had to date." - "We've had enough success with

the CGIAR .....to show that global public goods can be provided and can make a difference."

The CGIAR only taps into two main funding mechanisms. The major source is grant funding (sometimes called public subsidy), the other, so far very small source, is charity or philanthropy. There are other mechanisms aimed at GPGs, and new ones being developed that the CGIAR could and should be scanning and even engaging in promoting.

International cooperation has many uses. It is a tool for altruistic purposes, importantly so, and it serves many geo-political interests. But it is also a tool for states to align their long-term, enlightened national interests to achieve common goals. Some of these goals are GPGs.

Perhaps we should be telling developed country governments that the benefits derived by USA, Australia, and Canada from CIMMYT wheat research far outweigh the total benefits derived by all other countries from all other CGIAR research throughout its existence – or are we too embarrassed to mention it?. But this approach could provide a powerful lever to prise open access to national budget lines, since it can be argued that producing true GPGs should not be financed only from Overseas Development Assistance budgets but paid for by national budgets due to national benefits derived. Think about climate change research for example – who will gain most from CGIAR research?

CGIAR GPG research generates results which are non-rival and largely non-excludable i.e. the use of a new technology by one farmer does not prevent another making use of it. This means that agricultural research cannot rely solely on markets to be effective. It requires both voice and hierarchy to remain responsive and efficient. This raises an important policy question--do the main clients of the system, the developing countries, have enough of a voice in the management of CGIAR? Is the current governance of CGIAR adequate in terms of inducing discipline in Centre management and resource allocation?

Furthermore, if Unrestricted Funding continues to fall it could trigger a downward spiral in funding which is available for the core priority GPG research leading to an imbalance in the nature of the scientific work of the system. This would lessen its Global relevance which is precisely the CGIAR comparative advantage.

This raises another dilemma:

Should the CGIAR only be in the GPG business? Or, should we consider producing goods that are non-rival but are excludable and thereby yield incomes streams by restricting access to those who can pay (club goods). This sounds like heresy, but it would help break through the funding plateau. It would also improve the efficiency of the CGIAR by providing new incentives for researchers to excel as has been seen in mixed public/private research institutes in developed countries.

Could both approaches be used simultaneously? Perhaps, by establishing mechanisms to ensure unrestricted access to research findings for developing countries. Such a mixed system connecting public and private research has been successful in the genome project – why not in the CGIAR?. This may require a restructuring of the CGIAR towards the dual purpose of engaging the private sector (club goods) and GPGs.

Lessons from the competition

Finally lets see who we are up against in our quest to convince funders. The health sector uses Daily Disability Adjusted Life Years (DALYs) to derive social benefits to research.

a) A classic case is smallpox eradication that yielded a benefit:cost ratio of 459:1 and total present value of benefits of $45trillion

Item	Annual benefit ($millions)
Benefits to India	722
Benefits to all developing countries	At least 1,000
Benefits to the United States	150
Benefits to all industrial countries	350
Total benefits	1,350
Total present value of benefits	45,000
Total international assistance	98
Benefit-cost ratio	**459:1**

Source: Fenner and others (1988).

b) It is estimated that an Advanced market Commitment (AMC) of $3bn would bring an appropriate vaccine forward by 10 years and would reduce the annual disease burden cost by half. The average annual net benefit would be $3-10bn. Taking the median value the vaccine would create gains of $6bn/yr giving net present value gain of $50bn minus £3bn cost = NPV $46bn. – not a bad return!

c) The benefits of reducing the probability of an avian flu pandemic are huge. Some estimate that the cost of a pandemic to high-income countries alone would be about $550 billion. The World Bank has estimated that $1 billion would be needed to combat avian flu in poorer countries, while the World Health Organization (WHO) said that at least $500 million would be needed to develop drugs and vaccines to help control an outbreak. So a $1.5- billion investment would be a tiny compared to the predicted $550 saved if a pandemic were to occur – a case of good stewardship of resources.

We must recognise that the case for financing GPGs is not based only on cost-benefit estimates like these.

The main incentive is due to the critical needs met, the global bads avoided and promotion of global peace and prosperity. However, cost-benefit analysis of this type, with a water tight evidence-base, can certainly be helpful in establishing priorities and in mobilising resources (domestic and international) both in terms of strengthening support for present commitments what the CGIAR needs now; and for necessary incremental public funds – what the CGIAR will need in future to fulfil its mission.

Is anyone working on the agricultural and natural resource equivalent of DALYs – something that would not only measure the benefit of increased kilos of food, but also estimate the value of public bad avoided, hunger eliminated, children not going blind, women empowered, families lifted over the poverty line, topsoil not clogging up the rivers, natural resource conflicts avoided, families not displaced by flooding or livelihoods improved. Surely with all our combined skill it would be worth a try – anything would be better than watching a senior manager's eyes glaze over as you try and explain the virtues of (for the umpteenth time) the 40 – 80% rate of return to agricultural research projects.

At the very least I hope this has given us something to talk about in the next half hour or so.

Thank you