



All-Party Parliamentary Group on Agriculture and Food for Development



## **APPG Visit to Bihar, India - Trip Report**

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**The All-Party Parliamentary Group (APPG) on Agriculture and Food for Development** brings together Parliamentarians concerned with agriculture, nutrition and food security in the developing world. The Group promotes support for the developmental needs of the 450 million smallholder farmers who feed 2 billion people worldwide. It engenders progressive and informed debate within Westminster and beyond by bridging the gap between policy makers, agricultural development specialists and practitioners in the field.

Over the past year the All-Party Parliamentary Group has been convening meetings on the topic of “Home-Grown Nutrition”, a series which looks to address how smallholder farmers can be supported to grow more nutritious food, thus having beneficial impacts on their health and the health of their families.

The APPG now wishes to conduct some field studies which look to give practical examples of where investments in agriculture have had impacts on improved nutrition – the focus country is India and specifically the State of Bihar where around 80 percent of the population are totally dependent on agriculture for their livelihood. Reports suggest that investment in agricultural development in Bihar have improved in recent times with the state now promoting value-added and processed agriculture to benefit farmers.

The main purpose of the visit, as well as meeting with Ministers and officials, was to meet with smallholder farmers, health workers, and local leaders, visiting their farms, clinics and programme centres to get a clear picture of their particular needs and requirements – with a specific focus on the role of women in this area and their importance to achieving food and nutrition security.



### **Bihar: State Profile**

Once an ancient centre of power, learning and culture where two world religions have their roots, the state of Bihar is now often recognized as one of the poorest in India.

With more than 100 million people, Bihar is the country’s third most populous state. Located in eastern India with Nepal to its north, more than 40 per cent of the population live below the poverty line, mainly in rural areas with inadequate access to health, education and other services.

Bihar's infant and maternal mortality rates are among the highest in India, as is the state's proportion of underweight, malnourished children younger than three years old. The Government in association with partners, such as UNICEF, are currently making significant progress with health and nutrition programmes like the innovative Dular ('care and love') Strategy. This initiative trains thousands of volunteer village women who counsel families on the benefits of exclusive breastfeeding and provide other information vital to the survival of children and mothers who are pregnant or nursing.

The state is prone to severe flooding during the monsoon season, resulting in hundreds of people killed and livelihoods of countless others destroyed, along with their livestock, fields and other assets. The State Government have sought to build stockpiles of emergency supplies and helps communities prepare and plan for disasters.

Bihar also suffers from high rates of child labour, school dropouts, and low learning levels and illiteracy, particularly among girls, Muslims and scheduled caste children, who face discrimination in the education system and society in general.

### **Key challenges:**

Recent improved governance has led to better health services, a decline in poverty, greater emphasis on education and a reduction in crime

and corruption. Dramatic jumps in full immunization coverage and safe childbirths at medical facilities are also encouraging.

Still, the challenge of development in Bihar continues to be enormous due to persistent poverty, social inequalities, caste discrimination, rapid urbanization and poor infrastructure.

More than half the state's children are underweight, a proportion which is higher than the Indian average. More than three quarters of children under three are anaemic, while more than 90 per cent of adolescent girls are deficient in iron. Fewer than one in five rural households has access to a toilet facility.

### **Bihar: Agriculture**

Bihar lies in the riverine plain of the Ganga basin area and is endowed with fertile Gangetic alluvial soil with abundant water resources, particularly ground water resources. This makes Bihar's agriculture rich and diverse, although it has never reached its full potential. Individual farm sizes are, characteristically, very small often considerably less than a hectare. Rice, wheat, and maize are the major cereal crops of Bihar, while arhar urad, moong, gram, peas, lentils, and khesaria are some of the pulse crops cultivated in Bihar. Bihar is the largest producer of vegetables, especially potatoes, onions, brinjal, and cauliflower. In fruit cultivation, it is the largest producer of litchi, the third largest producer of pineapples and a major producer of

mangoes, bananas, and guava. Sugarcane and jute are the other two major cash crops of Bihar.

Our visit took place in “Nalanda District” and thus it should be stated from the outset that the agriculture, nutrition and governance programmes in this District may be very different to what is happening in the rest of Bihar. Nevertheless the delegation were able to base their reflections on various visits around Nalanda and recognise that one cannot generalise that particular conditions and programme successes will be the case across the State. But even if the work in Nalanda is more advanced than the rest of the State, it showed what can happen if the drive and focus is present and the local capacity has been developed.

In Nalanda specifically, the System of Rice Intensification (SRI) is being promoted by the government to increase productivity of rice in the last 4-5 years. It has also led to a claim to have the world record productivity in rice. The technique used for rice was experimented on wheat for the first time in the world in Bihar and it gave extremely encouraging results. After which the name of the technique was changed from System of “rice” to “root” intensification. On this field visit the APPG Delegates were shown how healthy and abundant the respective farmers’ crop was when employing SRI methods. We were told that this method uses significantly less seed and other inputs, thus is a more efficient method of agriculture.

In this instance the use of SRI methods appears to be working for some of Nalanda’s farmers. As a result it would be widely welcomed if SRI advocates were able to provide robust evidence that this method works in other areas and situations, in order to extend this technology to appropriate countries. The perception that more can be grown using less inputs is one which is very attractive to policy makers and advocates and thus this technology appears to have the potential to increase yields dramatically. Consequently more evidence of success and best practice is necessary to ensure that this system of intensification can be extended further.



One of the most impressive projects that the delegation visited was the women-led community based mushroom programme. Mushrooms have not been traditionally grown in Nalanda district, and this project was

promoted by the government. The government was also beginning to assist in the marketing of the produce. Over a period of time, with the increasing popularity of mushroom cultivation, mushrooms are being included in the local home cuisine, such as in the making of pickles, powders and other dishes. The mushroom cultivation is being done almost entirely by women without the need of access to land and the income generated is contributing to their financial empowerment.

This programme was an excellent example of how investing in agriculture can have significant developmental impacts on improved nutrition, access to market and earning sufficient income to pay for education and health care. Although this programme is still in its infancy, the progress and optimism from the women who the delegation spoke to, was tangible. Indeed there are still areas of the scheme that need investment – such as marketing, processing and ensuring reliable market access. However the overwhelming feeling was this is a programme which can have a significant impact on the lives of rural women, and is certainly an example of profitable “Home Grown Nutrition”.

On another visit of to Nalanda’s farmers the delegation visited Sodih village. This village has been a producer of vegetables for many years. In order to maintain and increase the production, the farmers were reliant on the use of chemical fertilizers and pesticides without fully understanding their environmental impacts. This, it was claimed, caused increased

resistance of pests to pesticides and excess use of fertilizers to avoid loss of fertility of the soil. As a result, the district administration under the national horticulture mission decided to promote organic agriculture. After initial resistance and misunderstanding, organic cultivation was welcomed in the village. The State Administration helped the village get certification from ECOCERT (a French accredited organisation for certifying organic produce). This year the village has achieved level 3 certification which means it is now a completely organic village. The delegation was particularly impressed with the management efficiency and sheer enthusiasm of this cooperative farming operation.



The wider potential for ‘organic farming’ per se across Bihar state as a whole is something that requires further study but the delegation noted the example of Sodih Village’s **cooperation**

between farmers was one which was highly commended. Due to entrepreneurial vision from some of the farmers, the village now block crops their collective land and is able to finance irrigation and storage facilities, with the help of government subsidies, due to their collective bargaining power. This was an example of a farmers' cooperative which appears to be having real benefits for those involved. As a result of aggregating the village land into one larger farm, collective decisions are able to be made on what to grow when and thus market linkages are easier to come by, than if all the respective farmers were acting individually.

The overwhelming feeling from the delegation was that we had seen many good projects and programmes, which could in theory be applied across Bihar. However, all projects must include a strong element of education, training (this includes training of trainers) and capacity building. Without this crucial education and training there can be no sustainability of programmes. As well as this, investments in market linkages, marketing and transportation infrastructure must be developed in order to ensure viable and profitable practices.

#### **Reflections from Lord Cameron of Dillington:**

Unlike in much of Africa, the alluvial soils created by the rivers of the lower Ganges would seem to have much potential. Having three seasons a year allows for an enormous amount of food and fibre to be produced. But it also means that, in order to maintain a decent

rotation, a huge variety of different crops have to be produced. This is very difficult to achieve and to manage on a tiny smallholding, and is even complicated when you are managing 300 acres, as in Sodih. So assistance with training for farmers in this area is really the key to success – as it is in Africa.

Also as in Africa, the land-holding and their small scale is a problem to be overcome. I did not fully get a handle on the landlord/tenant system in Bihar and whether it gives that vital security of tenure, but we were told that most farmers actually own their own land. This, it would seem, enables them to borrow small amounts of money (unlike in Africa) to develop their farms and their farming systems. There is also an extensive and generous grant system in place to help with buildings and irrigation. Sodih had not only had a 90% grant on its onion and potato store, but had also been funded to put in 46 boreholes with pumps for all-year-round irrigation. That sort of money is simply not available in Africa. India is undoubtedly a very rich country, and the UK's gradual withdrawal of aid from there is probably justified.

I think DfID's focus on training and capacity building, in the 3 or 4 poorest states, is the right way to go. Better farm management, better cooperatives and better processing, packaging and marketing is definitely the way forward.

I had the impression from the various people we saw in Patna and Delhi that there is an

Indian view of something idealistic (almost romantic) and honourable about growing your own food on your own piece of land, and that this is a large part of their culture. But in my view, this approach merely promotes devastating poverty from one generation to the next. I am a farmer and also believe it is an honourable profession, and I also think that the way forward, in developing countries, must be about including smallholders in the solution. But tiny, tiny landholdings will never work without driving cooperation; food production will not increase without using all the modern methods that science makes available; and above all the farmers and their communities will never rise out of the abject poverty which we saw, without driving PROFITS and wealth by all means available to them. The great Indian entrepreneurial spirit that we heard so much about must be helped to flourish in the field as well as the factory.



### **Reflections from Lord Chidgley:**

Our delegation travelled by car from Patna, the capital of Bihar State, to Nalanda's District

Headquarters at Bihar Sharif, a journey of 90km that took three to four hours over uncertain roads. Thus before even visiting the farms, a clear picture emerged of a major barrier to agriculture growth – lack of good roads to access to markets.

In other respects we found clear evidence that DFID's programme to boost markets for agricultural output was having an effect. The State's Agricultural Road Map, presented to us by government officials in Patna was generally thought to be a robust programme. DFID's plan for 2013-17, to boost agriculture markets by mobilising small farmers and linking them to buyers, enabling them to access finance, information and technology, will support the Agricultural Road Map. There is, however, as we witnessed, a major shortfall in agri-processing, warehousing, and horticultural expertise.

DFID's health and education support programmes in Bihar have been evaluated by the ICAI and rated Green/Amber, apparently one of their most positive assessments. It will be interesting to see whether their 2013-17 agriculture growth and reform initiative achieves a similar outcome. In this context, we visited some remarkable projects, such as women's self help groups devoted to growing mushrooms. With seemingly every house in the village engaged in cultivating mushrooms and value added products of this crop, such as mushroom pickle and mushroom powder, there was clearly intense community pride in the

success of the project. Access to markets was clearly a problem, and there was a need for expertise in branding, packaging and marketing to get proper benefit from the villager's efforts.

At the other end of the scale was a 300 acre plot assembled by a cooperative of farmers, to grow high value cash crops such as onions and cauliflowers in rotation in organic conditions. They had achieved organic status, dispensing with all chemical fertilisers and pesticides which had been used excessively, and were now relying on purchasing animal dung. Specialist consultants had certified organic status over a three year period, the resulting uplift in the market price of the crops exceeding the cost of the accreditation process by a factor of four. Some modern storage space had been constructed, but again, the general lack of marketing, packaging, and access to urban markets was holding growth back.

#### **Reflections from Sir Tony Cunningham MP:**

It was clear that the area had enormous potential. There is an abundance of good soil and the conditions can support up to three crops a year. It was also clear that there were several factors holding the area back from reaching its full potential. In particular there is a need for Land Reform as the plots of land are too small. There is also a need for an increased cooperation between those involved in the agricultural production and processes. If there could be a greater degree of cooperation then savings could be made on the purchasing of

essential goods such as fertilisers etc. There should also be a greater emphasis on marketing and storage of food stuffs to ensure that once products are available for sale they make it to markets.

DFID's focus on the three or four poorest states in the area is the correct approach. The need for technical assistance from DFID is great and everything possible should be done to ensure this technical assistance is received as soon as possible.

#### **Bihar: Nutrition**

Despite impressive economic growth in recent years, Bihar continues to be among the poorest states in the country. Investment in health services was low. However since the launch of the National Rural Health Mission (NRHM) in 2005 investment in health has grown and Bihar has focused on operationalizing the primary care level of its health service, as well as significantly strengthening medical and nursing training.

A key area of concern for the state remains child malnutrition. It is estimated that about 5 million children in the state are currently suffering from chronic malnutrition. The Integrated Child Development Scheme (ICDS), implemented through the Social Welfare Department, aims to improve the health and nutritional status of children aged 0-6years, pregnant and lactating mothers and adolescent women.

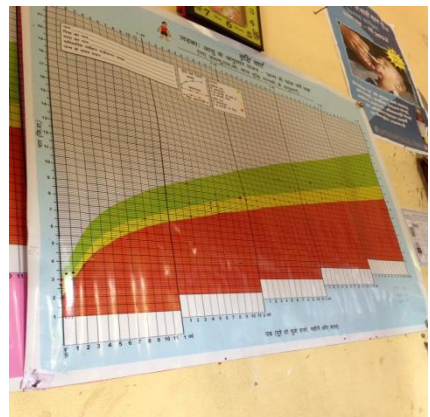


The delegation were taken to an “anganwadi centre”, meaning "courtyard shelter" in Hindi. They were started by the Indian government in 1975 as part of the Integrated Child Development Services (ICDS) program to combat child hunger and malnutrition. A typical Anganwadi centre is also supposed to provide basic health care in Indian villages. It is a part of the Indian public health-care system. Basic health-care activities include contraceptive counselling and supply, nutrition education and supplementation, as well as pre-school activities. We were aware that this particular centre was clearly one which was high-performing and was very well managed. Growth charts were all filled in, a meal was being cooked for the children and the children were all smartly dressed. It would be naive to think that this would be the case for the whole of Bihar. Nevertheless what this centre demonstrated was that with the right training and support for the anganwadi worker, an effective programme of immunization, nutritious feeding and regular monitoring of a child’s health, is possible.

The same can be said for the Nutrition Rehabilitation Centre (NRC) that we visited. This centre caters for “Severe Acute Malnourished” children. In this particular clinic all 20 beds were full of children receiving treatment, accompanied by their mothers or carers (who were paid a daily wage to be with their child at the centre). Having later met with the Bihar Secretary to the Department for Women and

Children’s Development (DWCD), he was surprised that this particular NRC was full. In many parts of Bihar it was reported that very few NRC’s actually filled their allocation of 20 beds due to poor identification of at risk children and the embarrassment of mothers at being identified as having severe acute malnourished children.

The Secretary went on to explain that, as we expected, the District of Nalanda is a very good example of how to manage this development work but this was not replicated all over Bihar. There was a clear call for more education, skills training and capacity building for both anganwadi workers and for more centres to be built. The government stated that 25,000 more anganwadi centres have been sanctioned to be built in addition to the 90,000 already existing.



The state and national governments of India appear to be investing very large sums of money into anganwadi workers as well as in infrastructure to support them. This support is

highly dependent on trust. The anganwadi worker receives money to buy the children's food for the month and there have been many stories where the worker will not use the full amount for food, thus impacting on the nutritious nature of the meal. DFID is assisting the government on a digital monitoring system for these payments and it is hoped this will limit any misuse of funds.

**Reflections from Lord Cameron of Dillington:**

If all of Bihar and the (soon to be) 115,000 anganwadi centres were all like the one we saw and they all worked properly with their NRCs, then malnutrition would soon be a thing of the past in Bihar. But as we were led to believe by both the State Secretary for DWCD (who was encouragingly frank) and Save the Children, other centres outside Nalanda did not function with the same efficiency. Maybe the State Government should ensure that the existing 90,000 centres are properly equipped (eg with child weighing machines) and resourced before putting in place the next 25,000. Again DfID is right to focus on capacity building in this area. It is all about budgets and managing the budgets – without corruption!

As far as transferability to other countries is concerned, again there is a huge amount of money being spent here. The 115,000 anganwadi centres, plus the village Ashas and the NRCs and the medical centres and supervisory sisters we met, must all cost a lot of money – as well as the food which has to be bought to feed the kids. But I think it is good

that they are trying to feed the children from local produce and not from imported plastic bags of supplements. The necessary nutrients are all there. It is just a question of making them available. This is not the case in many countries in Africa.

A final point being made by the UN representative we met: there is need for greater collaboration between the various departments. These include; the Department of Engineering and Public Works which deals with water supply, toilets and sanitation; the Department of Health which runs the NRCs; the DWCD which run the Anganwadi centres; and finally the Department for Education which should have a responsibility to look out for underfed children – especially the girls!

**Reflections from Lord Chidgey:**

In various briefings on health statistics in Bihar, there was an element of confusion. For example, we arrived believing that 48% of children aged 0-5years were severely malnourished. It transpired that this figure related to surveys undertaken in 2006, and the situation had greatly improved, with the percentage of severely malnourished children thought to have fallen significantly.

Seeing the Anganwadi system in operation was very encouraging, with children and their diet carefully monitored, and if necessary supplemented, whether or not they were able to visit the centre in person. Where a child's weight, height, and age characteristics fell short

of WHO safety guidelines, i.e. entered the “red zone”, children were automatically referred to the local 20 bed nutritional rehabilitation centre, depending on bed spaces being available. There they were admitted with their mothers for 21 days on a diet of therapeutic food, until they made sufficient weight gain.



The Anganwadi system, involving recruitment of paid wardens, appointed by the village to organise the centre, to procure children’s uniforms, ensure a nutritious diet and manage the monitoring system, all funded by the State, was impressive. We were conscious we were visiting an example of best practice, but nevertheless it provided an example to which others could aspire, in its self, no mean feat.

#### **Reflections from Sir Tony Cunningham MP:**

The visit to the Angadwadi Centre was particularly interesting. The hope is to have 115,000 centres of this kind in operation. Categorising the children into Green, Amber and Red levels is a good way to assess the severity of the individual’s health needs (with Red indicating that they are in need of urgent

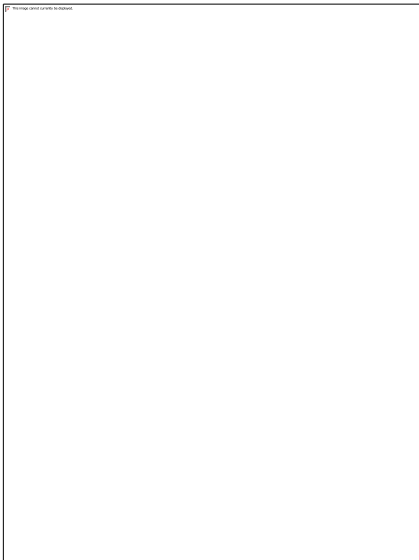
attention). There are certainly lessons that can be learned from these centres that other counties could implement. It is essential that the quality of each Angadwadi centre is maintained as more centres are opened. There should not be just a few exemplary centres and quality in all areas must be considered.

The Health Extension Workers programme which I saw in Ethiopia could also provide a good model that could be transferred to other countries including India as it encourages using local health workers to increase the access to medical care especially in rural areas.

The practice of not breastfeeding soon after birth in India must be addressed in order to make a significant difference on nutritional wellbeing. There is a real need to focus on the first 1000 days of a child’s life from conception onwards, this means looking after a woman’s nutritional needs while pregnant and actively encouraging breastfeeding from the beginning of a child’s life. The practice of not breastfeeding a baby for the first few days after birth because a mother’s milk is “dirty” at that time must be tackled. This key time in a child’s life can have significant effects on their later health and development and is a really good opportunity to make a difference.

## Final Reflections:

India is a country of paradoxes and Bihar is certainly no different. There appears to be significant progress being made in certain areas of agricultural development and bringing down the rate of child malnutrition. Fundamentally further progress in these areas will depend on excellent leadership continuing (as Chief Minister Kumar has shown), as well as extensive investment in infrastructure in roads, electricity and sanitation.



The issue of DFID's change in relationship with India, from grant aid to technical assistance, was an area which was discussed during our visits. It was suggested by Indian Ministers both at State and Federal level that this was a sensible approach to take due to the very many subsidies that state governments already provide, coupled with the lack of expertise and

capacity – an area which DFID can provide significant support. DFID has a £10million technical assistance programme prepared to support the “Bihar Agricultural Roadmap”, it will be crucial to ensure that this support focuses on market access, marketing of produce and capacity building – an area which we were told repeatedly was greatly needed.

On nutrition, the examples of monitoring of children's weight and size, that we witnessed, was exemplary. If this is replicated across Bihar strong progress should be made in reducing the rate of child malnutrition. It was suggested that this example of good practice was not ubiquitous across the state and thus there needs to be excellent training and support for anganwadi workers to ensure that they are able to effectively monitor and respond to the health and nutritional needs of the children. It is also welcomed that the government of Bihar will be further investing in more anganwadi centres; this however should not be at the expense of effective management of current centres.

With strong leadership from Bihar's “revolutionary” Chief Minister, and his aptly coined “Nitishnomics”, a government wide crackdown on corruption, as well as an effective programme of technical assistance from DFID, will hopefully continue the trend of farmers incomes increasing and child malnutrition decreasing. There are many challenges still to overcome, not least of which is the issue of rural infrastructure which must be improved to

enable farmers to achieve a reliable access to market. One of the startling figures discovered on the trip is that only 1 in every 5 new houses in India are currently being built with a toilet. This is a staggering statistic and thus the issue of clean water and sanitation will continue to be hugely problematic for many Indians. Overall, in Bihar, there was a strong sense of optimism, and with government investment and relevant agricultural subsidies, coupled with better monitoring and health care and nutrition for children, the State appears to be making good progress in areas which seemed impossible not so long ago.

Ultimately the Bihar Government needs to foster a state of resilient development which will promote an environment where people are able to access services with the desire to be self sufficient. In empowering women, reducing malnutrition, increasing health care provision, improving farmers' yields and access to markets, these interventions will require state, donor and NGO support. However for Bihar's development to truly flourish capacity building must encourage self sufficiency and resilience for lasting development across the State.

#### **Reflections from Lord Cameron of Dillington:**

With 1.2 billion people in India there is a serious infrastructure shortage. The roads are poor and must hamper the economy hugely. To have only one in five houses being built in 2013 with a toilet in a rich country like India is frankly a disgrace. Even without a sewage system (which applies in much of rural England) there are such

things as septic tanks. It certainly is a country of contrasts.

#### **Reflections from Lord Chidgey:**

Just a few weeks previously it so happened that I was part of a delegation to a small and very poor African country, where severe malnutrition and stunting is affecting 47% of children under five. By comparison, in Bihar children's vaccination programmes and development details were measured and recorded under a detailed chart-based "yellow, green, red WHO based system in the Anganwadi hut. Here, the system relied upon collecting children under a tree, from which weighing scales were suspended, and simply measuring weight against height and age, picking out only those that showed signs of malnourishment.

In the African village, records of vaccinations were kept in an exercise book and entered in each child's individual "health passport" kept carefully by the mother. Whereas in Bihar children from the village travelled no more than one or two kilometres to reach the Anganwadi hut, the African children travelled on foot from a cluster of villages, from a catchment area stretching over as much as 13 kilometres. There seems no reason why the Anganwadi system should not transfer to African villages, other than an ability or willingness of government agencies to allocate the necessary resources. This does however need to be underpinned by robust financial management

and audit control, which NGOs and aid Agencies can and should provide.

### **Reflections from Sir Tony Cunningham MP:**

Access to safe water and sanitation is a real concern in India and interventions that consider this issue must be found. Officials we spoke to confirmed that they recognised the need to integrate their approaches which is very good news.

### **Recommendations:**

1. The Bihar Government must ensure effective monitoring and evaluation of anganwadi centres and workers – to be certain that accurate records are made of children’s weight. This should be followed up with robust action, should a child fall into the “red zone”.
2. Better cooperation between Bihar’s farmers must be encouraged to aggregate land holdings so that investment and long term decisions will reduce risk and encourage commercially viable small businesses.
3. DFID must ensure that their “Technical Assistance Programme” encourages strong market linkages for smallholders, as well as providing capacity for marketing and processing.
4. Clean water and sanitation programmes must be urgently scaled-up to ensure that any gains in reducing malnutrition, that anganwadi centres make, are not lost by poor (or non-existent) sanitation. The Federal Government of India must prioritise the construction of toilets in or next to new dwellings, as well as providing provisions in existing towns and villages.
5. Nutrition should be placed as a cross ministry issue in the Bihar Government, to ensure coordinated efforts and programmes.
6. Further investment in rural infrastructure, such as roads, bridges, storage facilities and reliable power must continue to assist market access.
7. DFID should continue to promote transparency and accountability at all levels of government and administration.
8. Statistics on monitoring and evaluating malnutrition levels across the country must be regularly updated to provide clear figures.

The APPG wishes to thank:

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All those who contributed to the success of this visit



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