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Conference Report

Indonesia's economic development: contributing to a sustainable growth pattern

Tuesday 11 – Thursday 13 September 2012 | WP1152

Held in Jakarta

In association with:

Wilton Park

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"Both developed and developing nations must do more and do away with "business as usual" mentality. Developed nations must take the lead, but developing nations must also seriously do their part. With international support, we are confident that we can reduce emissions by as much as 41 per cent. This target is entirely achievable because most of our emissions come from forest related issues, such as forest fires and deforestation."

(President Susilo Bambang Yudhoyono - Pittsburgh G20, September 2009)

Introduction and key issues

Bringing Indonesian government officials, parliamentarians, opinion-leaders, representatives of business and civil society together with international experts, the conference sought to promote open discussion of green growth issues and the importance of low carbon development.

Key issues discussed at the conference included:

- The importance of the recognition by the Government of Indonesia that fair and equal access to resources is part of the sustainable use of those resources;
- Transformation of the energy system is inevitable; while this may appear costly initially, there is longer term benefit and investment in energy infrastructure represents a huge opportunity;
- Governance issues are crucial and there is a disconnect between central and local government; local ownership and community-based management is required to ensure resilient local livelihoods and sustainable development;
- Building rural economies through establishing clusters, co-locating generation of renewable energy with businesses needing to use it and integrating landscape planning, can be effective for stimulating sustainable growth with equity;
- Investment should be directed, or re-directed, to promote low carbon development, and to help Indonesia move higher up the value chain;
- Coordination, monitoring and evaluation of policies is crucial, while a proliferation of targets can lead to gridlock;
- Education and training will equip the next generation to make the most of green growth, whilst behaviour change is needed to transform mindsets about energy use and waste;
- Subsidies need to be tackled, so they are switched from rewarding fossil fuel consumption and towards supporting low carbon alternatives;
- Fiscal incentives, including taxation policy, are important to create the conditions for green growth to thrive.

Background

1. Indonesia's recent economic growth has been impressive amidst the global downturn, but it has depended heavily on fossil fuels and forest conversion to drive this growth. It is thus already a major emitter of greenhouse gases, especially from the land use sector; over the next 20 years it is expected that these emissions could rise steeply as the economy develops. The Government of Indonesia (GoI) recognises this contribution to the problem of climate change, and is keen to be seen as part of the

solution.

2. Indonesia has taken several actions that demonstrate global leadership on climate change. For instance:

   - At the 2009 G20 meeting in Pittsburgh, the President of Indonesia committed the government to making a 26% reduction in emissions by 2020, or as much as a 41% reduction if funding is provided by other nations or international carbon markets. These reductions are based on the projected emissions that would otherwise occur if no action is taken - the 'business as usual' scenario. Few other countries, particularly major emerging economies, have been as bold with their commitments; Indonesia made this commitment when other countries were holding back from setting targets, and this action may have prompted other nations to come forward with their own commitments.
   - At COP 15[1] in Copenhagen, the debate amongst the G77 nations was about how to respond to the proposed requirements for Monitoring, Reporting & Verification (MRV). Many countries saw this is an intrusion on sovereignty, but Indonesia pointed out that MRV is a part of making commitments and proving they can be kept. Thus on issues of sustainability, Indonesia is able to act as bridge between groups of nations, such as G77 and G20.
   - President Susilo Bambang Yudhoyono is co-chair of the UN panel for designing the post-2015 Millennium Development Goals (MDGs), together with UK Prime Minister David Cameron and Liberian President Ellen Johnson Sirleaf. Indonesia's Minister for National Development Planning, Dr. Armida Alisjahbana, co-chairs the Global Partnership for Effective Development Cooperation with ministers from the UK and Nigeria.

3. Climate change will hit the poorest most severely and therefore the best way to improve the capacity to adapt to climate change is to rise from the ranks of poor countries. This suggests that countries like Indonesia should aim for economic growth at all costs, and think about shifting to low carbon options later. However, if improving energy consumption patterns and becoming more efficient with land use leads to better economic conditions, then mitigation and adaptation are not mutually exclusive. In fact, 'sustainable growth with equity' could broaden and deepen development, improving the livelihoods of the rural poor, and enhancing the capacity of communities to be resilient to the possible effects of climate change. Whilst the original target was concerned with emissions, GoI now recognises that sustainability is inextricably linked with equity. Fair and equal access to resources is as important as sustainable use of those resources.

4. Indonesia has a rich endowment of land and natural resources. It also has a large population, and so the *per capita* resource wealth is lower than some others in the region, such as Malaysia. It is clear that Indonesia will not achieve its target of becoming an upper middle income country by 2025 using natural resources alone. The key to achieving sustainable growth whilst moving to a low carbon economy is to restructure the way the political economy currently works and to aim for equitable outcomes for all its people. This is a significant challenge, especially as over the past 14 years Indonesia has experienced a period of rapid political change and economic development.

Context

The Political Economy

"Exports are dominated by raw unprocessed natural resources, such as

5. Indonesia is almost a trillion dollar economy with one of the highest growth rates in the G20. Yet it faces a serious challenge of how to use finite resources to continue to drive this growth without compromising long term inter-generational equity.

[1] 15th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCC), December 2009

coal, palm oil, bauxite and iron ore, rather than by processed items such as metals and consumer goods. As a result, foreign direct investment (FDI) is mainly focused on extracting raw materials rather than helping Indonesia move higher up the value chain."

6. Since its recovery from the financial crisis in 1998-99, Indonesia has experienced a period of macroeconomic stability. Inflation is under control, public debt is low relative to the OECD average, and exchange rates are stable. However, the Indonesian economy has certain features that may undermine the conditions necessary for sustainable growth in the future. For instance, there is a reliance on the primary sector, which represents about 26% of the economy, while the manufacturing sector has a smaller share than it did in 2000, now stands at 24% of economy. Exports are dominated by raw unprocessed natural resources, such as coal, palm oil, bauxite and iron ore, rather than by processed items such as metals and consumer goods. As a result, foreign direct investment (FDI) is mainly focused on extracting raw materials rather than helping Indonesia move higher up the value chain. GoI is starting to address this, but it will take time to implement any changes.
7. Some experts argue that Indonesia's economy shows signs of over-dependence on natural resources. This may lead to so-called 'resource curse' symptoms, whereby rent-seeking undermines governance, and growth is volatile, which in the long term means lower average growth. In this scenario, the manufacturing sector struggles to compete. In some cases the uncompetitiveness may spread to the services sector, as is the case in parts of Middle East. Evidence of Indonesia's reliance on natural resources can also be found in the way that employment creation has been somewhat stagnant, although it has kept pace with the growing workforce, and productivity gains have been patchy.
8. Impressive macroecomic management has not been matched by political capacity. To some it looks as if Indonesia is still in transition more than 10 years after the '*reformasi*' process that followed the economic crisis. There seem to be few skilled politicians who can steer policy through the system. Decentralisation is also a factor that slows down, or even blocks, policy implementation.
9. The fuel subsidy is an obstacle to sustainable energy use, an economic burden and a political challenge. The subsidy largely benefits the more affluent citizens, encourages car use and over-consumption of fuel; it is thus neither equitable nor sustainable. The government has tried to reduce it, but was thwarted by parliament. The voices in favour of repeal were silent, so certain factions in parliament were able to play the populist card. The 'justice and equity' argument was not getting through.
10. Ever-changing investment laws make it difficult for foreign investors to plan. They may also inhibit local investors who may be squeezed out by more powerful business people who are perceived to have political clout.

Human Development

11. Since 2011, the proportion of people living in absolute poverty has fallen from 18.4% to 12.5% (30 million people), but this is based on a low threshold of $0.80 per day ($1 per day at 2005 Purchasing Power Parity (PPP). There are also large numbers of 'nearly poor'. About 45% of the country, or over 100 million people, are living on less than $2 per day (PPP).

"Indonesia is a high cost economy. It is currently more expensive to move goods from Kalimantan to Java than from China to Java. This is a consequence of the poor infrastructure, but also to some extent a cause of it."

12. According to the GOI definition of the term, the middle class is growing as people move out of poverty. But this is a wide band that includes a range of earnings from $2 to $21 per day. Of this middle class band the majority earns less than $4.30 per day (PPP). This means that a large number are either poor or vulnerable to falling into poverty. If there is price shock, for instance food prices rise, then poverty will increase sharply and quickly.
13. GDP growth is unevenly distributed. The 'Gini coefficient', which measures inequality, has risen sharply from 0.33 to 0.41 in last ten years. By comparison, the Gini coefficient in Brazil has fallen over the same period. This kind of polarising inequality is new to Indonesia, whereas Brazil has been historically more unequal. Development is skewed to the west of the country. Transport is perilous in many areas, and some places are so isolated they are barely accessible at all, such as parts of Papua.

14. Indonesia is a high cost economy. It is currently more expensive to move goods from Kalimantan to Java than from China to Java. This is a consequence of the poor infrastructure, but also to some extent a cause of it. All transaction costs are too high, including those to build infrastructure.

15. Improvements to the education system are keeping pace with economic growth. Asia in general has seen a transition in the market for high-level talent. One example cited is that after years of looking to foreign experts, Asian consulting firms are increasingly locally-owned and staffed, as the local talent pool is deeper and wider. This is not yet the case in Indonesia, where top-level talent is in short supply. Universities still tend to funnel students into quite narrow subject fields, and discourage flexibility. This is inhibiting the growth of home-gown talent that will have the technical skills to drive the new low carbon economy.

The Government of Indonesia's approach

16. Recent pronouncements of GoI have recognised that the major challenges of the future are the battle against poverty and actions to tackle climate change. The pillars of the GoI's national development planning are therefore 'pro-growth, pro-job, pro-poor and pro-environment', with the overall aim of 'sustainable growth with equity'. The objective is to broaden the economic base to make growth both sustainable and equitable. Some view the concrete plans at the national level as more concerned with economic growth and social protection, rather than bringing together sustainability and growth.

17. The **Master Plan for Acceleration and Expansion of Economic Growth** (MP3EI) is aiming for resource-based industrialisation in six 'growth corridors'. It will promote infrastructure development and investment by State-owned enterprises in partnership with the private sector. GoI sees this as a solution to the very high transportation costs. It aims to promote processing of natural resources, in order to move from the primary sector to secondary sector/manufacturing, thereby achieving more value added, more business partners and SMEs and more employment. It also hopes to broaden the commodity base to encompass ecosystem services and bio-prospecting.

"Some observe that implementation of plans and enforcement of regulations is weak in Indonesia. Decentralisation has led to a high level of local autonomy, but the district-level bureaucracies are not yet capable of handling these new responsibilities, and have not yet standardized their regulations."

18. The Master Plan is built around a broad picture of where the predominant commodities are located, for example Kalimantan is identified for mining and Sumatra is for plantations. It attempts to bolt on added value to the natural resource extraction, using what some regard as very ambitious transportation links. In most cases these transport spines are designed to push commodities to export markets rather than build any local economic resilience or allow marginalised communities to improve access to services and local markets.

19. MP3EI is particularly concerned with economic growth rather than environmental and social considerations. Some question how the master plan was conceived and to what extent it integrates the existing planning instruments at the provincial and *kabupaten* level, such as the local medium term development plans (RPJM) and spatial plans (RTRW).

20. **The Master Plan on Poverty Alleviation Acceleration in Indonesia** (MP3KI) aims to accelerate poverty reduction. It will improve the effectiveness of existing programmes, by better targeting and integration with other programmes, such as infrastructure and land certification. It will gradually reallocate the fuel subsidy toward better basic services and productive activities. This includes the establishment of a new social security institution in 2014, which will be the world's largest single-payer system for health. There will also be a sustainable livelihood programme, covering community empowerment, financial inclusion, and local business development.

21. Some observe that implementation of plans and enforcement of regulations is weak in Indonesia. Decentralisation has led to a high level of local autonomy, but the district-level bureaucracies are not yet capable of handling these new responsibilities, and have not yet standardized their regulations. There is a lack of data upon which to make good policy, for instance forestry and land data is unreliable. Uncertain progress in the

development of local spatial planning may create land use disputes that will hamper investment and jeopardize the economy. There are challenges regarding how policies in the mining sector, oil and gas, forestry, plantations, and fishing, for example, can be implemented without causing serious environmental harm. If climate change financing were available, it is not clear how it would get deployed locally.

22. Major plans such as MP3EI may have political resonance, but they are demanding to implement. It may be hard to attract private sector investors if they fear that a future government (post 2014) may end it. GoI assures that contracts will be honoured, based on the logic that any future government will still have a pro-poor, pro-growth agenda, so MP3EI will continue. This assumes any future government would interpret such an agenda in the same way as the current government.

Sustainability

23. Experience with natural disasters and dealing with the consequence of man-made environmental problems means that Indonesia already recognises the dangers of ignoring or mistreating nature. Many natural disasters are exacerbated by environmental degradation, for instance destruction of mangroves reduces protection against tsunami and storm surges. Deforestation increases the risk of landslide and flooding. Indiscriminate or careless mining causes widespread ecosystem damage.

24. There is a realization on the part of GoI that environmental quality is deteriorating in Indonesia, and policies are being designed to counter this. For instance, as part of the Letter of Intent[2] signed with Norway, Indonesia issued a two-year moratorium on clearing primary natural forest and peatland. It is not yet clear what will happen after this moratorium expires in 2013, but in any event the rate of deforestation has slowed down, falling from 3.5 to 0.5 million ha per annum in past decade, according to the Ministry of Forestry. This may be partly because most of the lowland forest in Sumatra and Kalimantan has already been largely cleared, and so it is inevitable that the deforestation rate must slow down in those areas eventually. However, Papua, with 25% of the country's forest estate, remains relatively untouched for now as its remoteness and lack of infrastructure means forest conversion is rarely economically viable. This is already beginning to change as more accessible forested areas are depleted and Papua becomes a more attractive proposition. Meanwhile, reforestation efforts in previously cleared areas have been patchy, and planted forest development is very low compared to other countries in Asia[3]. Management of the production forest estate is poor, with at least 30 million hectares severely degraded, which means it makes little economic contribution.

"For GoI the green economy is not a goal, but a tool to achieve sustainable development and 'growth with equity'.

25. There is a problem with over-fishing, and in managing the commons in a way that can exclude access to outsiders. Also bomb fishing is still practiced; condemning it is not likely to succeed until there are viable alternatives, such as better equipment. There is a government programme for this, but some point out that it needs better definition.

26. The 'green economy' is perhaps a controversial term. At Rio+20 some called it the "greed economy". For GoI the green economy is not a goal, but a tool to achieve sustainable development and 'growth with equity'. In a report produced for Rio+20 it identifies best practice at both government and community level. Indonesia has not yet implemented the green economy, but at the community level there are already some examples where local wisdom embodies sustainable development practices. For instance GOI cites the following as examples:

    - The famous Bali irrigation system, where the community cooperates to achieve fair access and resource efficiency

[2] Letter of Intent on cooperation on reducing greenhouse gas emissions from deforestation and forest degradation, 26 May 2010

[3] Global forest resources assessment 2010 country report: Indonesia, Food and Agriculture Office

- The Dayak traditional sustainable forest management approach, where approval from elders is needed for any tree felling.
- Fishermen in Maluku close the fishing grounds for one month each year to allow stocks to recover
- Local examples of micro-hydro developed by communities under their own initiative

These micro projects and long-standing community practices may illustrate that the green economy is inherently socially inclusive, but they will not be enough to shift the country to a green growth path. It is broadly agreed that moving to a low carbon path at a meaningful systemic level needs government intervention.

27. Policy on zoning and spatial planning is not sufficiently coherent. Some provinces have still not submitted their spatial plans, causing confusion over what kind of development is permitted and who has the final say over granting permits. Money politics may play a part, as land use permits can be used as patronage to repay political favours and distribute rents to supporters.

28. Indonesia has very high energy intensity. Even if all vehicles in Jakarta switched to greener fuel, it would still not solve the problem because there is so much heavy traffic; the system is fundamentally inefficient in energy use. There are some calls to prioritise resources for domestic use, for instance to use coal locally rather than export it, but it is hard to see how this will help the country move to a low carbon economy.

29. Climate change programmes are not the responsibility of one ministry as they are for example in Brazil. Involving multiple ministries and agencies is seen as a good thing by those that believe this means each ministry has its own agenda and 'owns' the plan. On the other hand, a proliferation of overlapping plans may create more confusion. The government encourages climate change mitigation and adaptation to be integrated in development planning at all levels.[4]

Sectoral opportunities and challenges for sustainable development

Coal

30. The attraction of coal is that when the cost of carbon emissions is ignored, it is the cheapest fuel available for power generation. In a world where 50% of households have limited access to electricity and 25% have no access at all, coal is capable of generating enough power to meet this demand. Indonesia has the advantage of proximity to many of these unsupplied consumers, most of which are in India, China as well as Indonesia.

"The coal sector has grown rapidly in the past decade, with exports increasing at 15% per annum. It provides direct employment to 39,000 people; it is responsible for many indirect jobs, triggers economic development and earns foreign exchange. However its detractors point

31. The coal sector has grown rapidly in the past decade, with exports increasing at 15% per annum. It provides direct employment to 39,000 people; it is responsible for many indirect jobs, triggers economic development and earns foreign exchange. However its detractors point out that it is subsidised in various implicit and explicit ways, and at increasing cost. For instance the government has the power to set a 'price floor', which may now be applied to help miners struggling with the recent drop in world prices. This leads to over-production of coal when market signals show that production should be constrained.

32. Some express concern the sector is badly governed, with 10,000 coal mining permits issued by central and local government, many of which may involve overlapping claims or unclear boundaries. Some 90% of production is in Kalimantan. Of those permits that are viable, about 4,000, there are about 300-400 companies operating. Around 120 of

[4] The following are all illustrations of integrating climate change mitigation and adaptation into law: Presidential Instruction no. 10/2011: Forest Moratorium; Presidential Decree no. 25/2011: National Taskforce for REDD+; Presidential Regulation no. 61/2011: National Action Plan on GHG Emission Reduction; Presidential Regulation no. 71/2011: National GHG Inventory System; Presidential Regulation no. 3/2012: Spatial Planning in Kalimantan

out that it is subsidised in various implicit and explicit ways, and at increasing cost."

these are in the coal mining association and aim to conform with proper mining practices. Many of the other companies are opportunistic, set up by people who know little about mining. These companies are looking for a quick return; now that the price has dropped they are in distress. These small companies take no account of the costs of closing the mine and restoring the landscape. It is estimated that about 2% of turnover should be set aside for the reclamation process.

33. In public discourse there is often consternation that although the coal industry emphasises the potential to improve access to the power grid, in practice most coal is exported rather than used for domestic supply. It is ironic that the biggest coal mining areas also have the most power outages. Indonesia's domestic market for coal is 65m tons, but production is 370m tons and hence the exports. The reasons for this are connected to Indonesia's general problems with infrastructure and planning. Power generation expansion in Indonesia is lagging behind coal production. Although the state electricity company (PLN) is behind target in expanding supply and many areas still reliant on inefficient diesel generation, when coal companies have applied to build power plants, PLN has rejected their proposals.

34. The government has proposed a new 'value added' regulation that requires mining companies to process raw materials before export or face a large export tax. Many people believe this is unrealistic. Building the processing plants, especially smelters, could require huge investment. If implemented in full the capital required would exceed the country's domestic investment capacity and be considerably greater than FDI flows. It is still unclear if this rule will be applied to coal; the policy seems to have been floated without a clear notion of what sort of value added is appropriate for coal.

35. Economists point out that there are underlying reasons why Indonesia exports ore rather than metals. It relates to infrastructure, such as power, human resources, access to capital, and governance, all of which add up to a lack of competiveness in downstream industries. Rather than deal with these tough systemic issues, the government aims to transform the sector using the blunt instrument of regulation. This may lead to misallocation of capital, without tackling the underlying conditions. There is a need to increase value added processing in Indonesia, but complex regulation is not the way to do it. More regulations without capacity may create more non-implementable rules and more uncertainty for private sector. It may even have the unintended consequence of creating many unskilled jobs, at a time when the country wants to move closer to the technological frontier.

Renewable Energy Potential

"It is widely acknowledged that Indonesia has great potential for renewable energy."

36. It is widely acknowledged that Indonesia has great potential for renewable energy. The country's energy needs are growing rapidly (by 7% per annum), yet 29% of households still lack access to the power grid, and many others experience unreliable supply. Oil and gas, once the mainstay of the energy mix, are in decline as reserves are run down and new sources are harder to find. This should allow for some fresh thinking on shifting the power mix to renewables. In reality there is increased emphasis on coal, of which Indonesia has abundant supplies. There is a danger that over investment in carbon intense power generation may create a 'path dependency' problem, delaying a switch to renewables. Some argue that it is inevitable that Indonesia will need to develop RE, but will it do it now or later?

37. The economics of RE make sense where it displaces diesel generation, which is how many rural communities get power. PLN sells power for about Rp.625 per kwh, but it costs Rp.4,000 per Kwh (US$0.35) to produce. So PLN invites companies to construct plants with negotiable off-take contracts. It seems that the local PLN manager has discretion, and offers about Rp.1,800 per kwh. The price issue is just part of the appeal, because there is also the question of reliability of supply. Diesel generators have lots of downtime, and need expensive lubricants and spare parts that can be a challenge to obtain in remote areas.

Current plans for renewable energy

38. Various plans and policies have been announced to direct national energy policy with specific targets, for instance the 2006 Presidential Decree (PERPRES 5/2006) that calls for 17% of energy to come from RE by 2025. But in this scenario one third of energy will come from coal, which is a three-fold increase in 2010 coal consumption.

39. A more ambitious plan is the 25/25 vision: in the year 2025, 12,000 MW will come from RE sources, approximately 25% of total generating capacity. Coal will make up one fifth of the mix, less than now in proportional terms, but actually double the consumption in absolute terms, as total energy output will have increased by 2.5 times. The plan is still under parliamentary consideration.

40. PLN is currently in phase one of a plan to increase power capacity by 10,000 MW. Most of this will come from coal. But in the 'Fast Track Power Development Programme Phase Two' the target of 10,000 MW will focus on RE (geothermal 3.967 MW and 1174 MW hydro).

Role of private sector in developing RE

41. Presently, low carbon development may not make financial and commercial sense for most businesses in Indonesia, since it involves relatively high investment cost for limited short term returns, despite long term benefits. It may make economic sense if Indonesia identifies opportunities to provide incentives and manage energy savings potential in equipment and processes used by small and medium-sized enterprises (SMEs). Indonesia's SME sector contributes 60% of GDP. The manufacturing equipment and power generation used by SMEs is outdated and not energy efficient. This is partly because manufacturers cannot rely on the PLN grid, so they purchase diesel generators.

42. In order to ensure attractive returns and reduce the payback period, GoI could use fiscal incentives and increase the energy price, removing the distortion of subsidised fuel. It will also need to lower the transaction costs, which are especially acute for RE. In many cases the fuel, such as biomass, needs to be transported over long distances, or to be generated in situ, for instance geothermal, Transmission and connectivity issues with the PLN grid will require resolving.

"RE is a long term investment based on rules in place when the investment is made. Policy changes are a problem as they may undermine the viability of the investment. The prospect of regulatory uncertainty raises investment costs."

43. Legal clarity and certainty are part of a good business environment. It currently takes two years to develop mini hydro, and much longer for geothermal. There are forestry and land issues: permits, clearance and compensation for example. RE is a long term investment based on rules in place when the investment is made. Policy changes are a problem as they may undermine the viability of the investment. The prospect of regulatory uncertainty raises investment costs. Governments are judged on their track record in properly formulating, evaluating and implementing regulatory and fiscal changes. Indonesia does not have a good record in this area, as too often policy is either not well designed or is based purely on political rather than economic considerations. On the other hand there are instances of good policies that lose their way in the process, either at the political level, such as the proposed reduction in fuel subsidy, or at the implementation stage.

44. PLN is subsidised and generally thought to be inefficient. It loses around 10% of power in transmission. It has capital for maintenance or grid expansion, so when expansion is the political priority it happens at the expense of stability and efficiency. On the plus side there is now a feed-in tariff (FiT), with a purchase obligation by PLN up to 10 MW.

Renewable Energy options

45. Worldwide, the stock of capital invested in renewable energy recently surpassed one trillion dollars, led by China which is aiming for 40% reduction in energy intensity. In 2011, more new investment (approximately $260billion) went into low carbon installations than into non-renewable infrastructure, which could mark a tipping point. But of course the installed base of non-renewable energy infrastructure is already huge,

which means it takes a long time for low carbon transition to happen. The sector is attracting more capital investment, and improved competition in research, development and deployment is reducing costs per unit of output. driving down transaction costs as the sector goes mainstream.

46. One of the arguments in favour of choosing the low carbon development pathways is to avoid the problem of 'stranded assets'. This is the situation that occurs when a large piece of infrastructure, for example a coal-fired power station, that was designed to operate for 30 years, becomes unviable at an earlier date. This may be because of policy changes, reduced access to water, changes in social norms, market sentiment, technical substitution or new abundancies, such as shale gas or geothermal. The problem of stranded assets is particularly acute for a country in Indonesia's position. The planning decisions made today may be based on a number of assumptions that could turn out to be false over the next few years. For instance, the price differential between renewable and non-renewable energy could change significantly as new technology becomes available.

47. Indonesia's economy is still heavily reliant on the export of natural resources. Other countries could decide to protect their own investments in low carbon technology by imposing tariffs on certain goods based upon their carbon intensity. An early indication of this trend is the suggestion by US Environmental Protection Agency (EPA) that palm oil should not be classified as a renewable fuel, since it found that palm-oil fuels emitted only 11–17% less greenhouse gas than diesel over their entire life cycle.

48. There may be a case for a developing country to 'free ride' on the carbon reductions of other countries, for instance by ignoring renewables and using cheaper high carbon fuels in order to drive economic growth in the short term, with a view to switching to renewables further down the line. It is not hard to see that is not a viable option for Indonesia. Unlike China, Indonesia exports commodities rather then finished goods. It is therefore easier for other countries to quickly seek alternative sources for these commodities, or to substitute them with alternatives. Indonesia is not embedded in complex supply chains, or producing unique products that are hard to find elsewhere. If global market trends start to favour low carbon products, then Indonesia will need to be ready to respond. This requires planning today in order to anticipate such shifts in the rules of globalised trade.

"Low carbon energy is not just about fuel switching to alternative fuels. The act of analysing energy usage makes all business processes more efficient, as often the answer is to use less energy (or lose less energy) in the process."

49. Low carbon energy is not just about fuel switching to alternative fuels. The act of analysing energy usage makes all business processes more efficient, as often the answer is to use less energy (or lose less energy) in the process. This has side-effects by forcing a re-think of systems, and thus innovating to increase t*otal factor productivity*, pushing technical frontiers.

a. TABLE: Feed-in Tariffs

Energy type	Feed-in tariff
Sanitary Landfill Municipal Waste to produce methane gas	8.8 US cent/Kwh
Anaerobic Digestion of municipal organic solid waste to produce methane gas	10.9 US cent/Kwh
Pyrolisis produce biocarbon fuel and heat	10.1 US cent/Kwh
Solar	No FiT yet
Geothermal	12 US Cent/Kwh
Hydro (<10 MW)	6.8 US Cent/Kwh

(based on Ministerial Regulation ESDM no.22, 2012)

50. **Biomass:** Indonesia is a large producer of biomass, in the form of waste from forestry, plantation agriculture such as residues from rice, rubber, sugar and palm oil, and also from organic household waste. The challenge is accessing a sustainable supply. There is competition for feedstock, and in the waste sector there are problems with collection. For example, palm oil kernels are exported and used for co-firing with coal, because

the export price is higher than domestic prices for biomass. This may change as domestic capacity increases. However, there are huge untapped supplies of biomass, particularly from municipal waste, most of which is either deposited in unsanitary 'open dumping' sites or not collected at all.

51. **Biofuel:** Studies shows that sugar cane is the most efficient feedstock for biofuel, but it needs good infrastructure, efficient processing and large flat areas of arable land, which unlike Brazil, is in short supply in Indonesia. Jatropha was seen as having good potential, especially for eastern Indonesia as it is drought tolerant and can thrive on marginal lands. Practically all parts of the jatropha plant are used: the oil is processed for biofuels, the trunk is manufactured for fertilizer and the by-product of glycerin is used in organic soaps. In theory, its cost per barrel of fuel should be comparable to sugar cane. It has not yet demonstrated its value as the oil yield is not high enough, and only 120,000 hectares has been developed so far in Indonesia. However, new research may be getting some better results. Palm oil is seen as having good potential for biodiesel, but care needs to be taken to ensure an ecological balance and efficient carbon cycle. Palm oil from plantations developed on recently deforested land (especially peat land) carries such a high carbon cost that it may release more carbon than the fossil fuel it replaces.

52. **Geothermal (GT):** Indonesia is the world's largest potential source of geothermal, and this could, in theory, replace almost all of Indonesia's installed power capacity from oil, coal and natural gas. However, there are significant challenges:

    - The need for exploration by geologists, which is expensive and risky as there is no guarantee of finding a viable source.
    - Generative capacity has to be built in situ. It carries all the up-front costs and risks of oil and gas, but without the benefit of portability.
    - The sources of GT are often in remote places, and near volcanoes, so far from grid connections and where the power is actually required.
    - Financial rewards are lower than for oil and gas, despite a similar risk and cost profile. So projects may need subsidy, or be undertaken for reasons of corporate social responsibility (CSR) rather than for hardcore business rationale. They may also need government to underwrite risk, for instance by supplier insurance cover for exploration risk
    - Indonesia could learn from New Zealand’s experience, and co-locate generation with clusters of businesses to use the power or high grade heat, for mineral extraction, forestry, biofuels and bio-products

“Indonesia is the world's largest potential source of geothermal, and this could, in theory, replace almost all of Indonesia's installed power capacity from oil, coal and natural gas. However, there are significant challenges.”

53. **Solar:** Despite the large potential, there is no feed-in tariff yet in place for solar, and so the cost per Kilowatt is uncompetitive compared to non-renewable power. The global price of PV panels is falling, driven largely by Chinese investment, and countries, such as Thailand, that have applied a Feed in Tariff (FiT) have attracted large PV projects.

54. **Wind:** This needs minimum wind speed of 6m/s, which is rarely achieved at suitable sites in Indonesia, as most of the country is too close to equator.

55. **Hydro:** There is large potential for run-of-river mini and microhydro schemes that have low environmental impact, unlike dams, and deploy proven technology. This would be very good for off-grid supply for local needs. Although many Indonesian rivers are quite shallow, especially in dry season, new types of turbine can be placed on the river bed, and still operate when only partially submerged. Large hydro currently contributes the bulk of the RE in Indonesia (4.2 GW), and has major potential, but many schemes involve considerable environmental disturbance. There has been talk of a 20 GW 'mega-dam' in Memberamo, a remote and densely forested part of Papua province, but it would be extremely expensive, generate power that far exceeds potential local demand and faces significant technical challenges.

56. Ocean energy: With Indonesia's large ocean area and abundance of tidal races

between islands, there may be large potential for tidal power systems.

Food Security

57. Land use and food production is not as efficient as it could be. Average rice yields are quite low, a problem throughout South East Asia, and rarely above 6 tons per hectare compared to the potential yields of up to 15 tons per hectare that could be achieved with better irrigation, inputs and pest management for example. Mechanisation is not efficient for very small plots of land, so there is a need to encourage small groups of farmers to form cooperatives to manage capital goods collectively. Agroforestry is an important source of nutrition for many Indonesians, although the legal status of this landscape type is unclear. It is often deemed to be within the State Forest, and the local people have limited rights to use the forest resources. It may also be subject to re-zoning for conversion, for instance to oil palm or urbanisation.

58. Twenty-five million Indonesians are food insecure, mainly in the east. Some 37% of children suffer stunting, the world's 5th largest total comprising 7.7 million. Stunting does not just refer to height; it is also a cognitive disorder as malnutrition inhibits brain development. These people are likely to suffer increased morbidity and are poorer than their better-nourished peers. They thus become a future burden, not a resource.

59. There are some challenges to achieving future food security. The population is growing at 1.49% per annum which means food production needs to supply another 30 million people by 2020; climate change is already affecting production and pricing; and land conversion is reducing domestic capacity. Policies that favour biofuels, in Indonesia and abroad, may change the way land is used. Rather than just soak up surplus production, or non-food grade oils, land may become dedicated to biofuel production, in competition with food production.

60. The government plans to tackle the key dimensions of food security as follows:

<u>Production</u>

- A new food law is almost completed, with only one controversial clause, regarding *Halal* issues, left to be agreed in parliament. The policy aims for self-sufficiency from domestic production, with importing food as the 'last resort'. By 2014, the aim is to achieve surplus in five key commodities, including rice, sugar, corn and beef. Action will be taken to reduce post-harvest losses, which for rice is around 13%, build strategic reserves and use fiscal policy to protect domestic farmers
- Some experts argue that self-sufficiency does not make much economic sense, and that *self-reliance* should be the aim. Imports are inevitable as the economy develops, and the emerging middle classes want a more diverse diet. Comparative advantage changes as the economy develops, and not all crops are appropriate. It is suggested that Indonesia may be better off by concentrating on high value agroforestry and estate crops, such as coffee, cocoa, nuts, palm oil, starches and resins, rather than cereals and sugar.
- Although the stated goal of GoI is to achieve a diversified food supply produced in a sustainable way, built on local wisdom, some plans seem at odds with this goal. For instance, the huge agro-industrial complex planned in Papua (Merauke Integrated Food and Energy Estate - MIFEE) is an example of taking action in the name of self-sufficiency, but in a way that actually reduces self-reliance. In Merauke it could reduce food security for local people, even though it may increase the aggregate supply of particular cash crops.

<u>Accessibility</u>

- The food logistics agency (Bulog) is tasked with maintaining price stability and distributing subsidised rice, with an allocation of 15kg per month for 30 million households at subsidised prices. Critics of this approach observe that it may be more efficient to improve economic access to food, than to distribute subsidised

"There are some challenges to achieving future food security. The population is growing at 1.49% per annum which means food production needs to supply another 30 million people by 2020; climate change is already affecting production and pricing; and land conversion is reducing domestic capacity."

food.

Consumption

- After a legacy of promoting rice consumption as a sign of modernity, GoI now recognises that reducing the dependency on rice will improve the food security and nutritional conditions of many people, especially in the east of the country not suitable for rice cultivation. This should increase demand for horticultural products and encourage a return to traditional staples, such as tubers (cassava) and starches (sago).

Transport

- The food industry suffers from the same challenges facing other products in Indonesia. Transaction costs are high and infrastructure is inadequate, so consumers pay more than they need to for food. In some cases it is cheaper to import food from Australia than from other parts of the country. In addition to post-harvest losses, the Ministry of Trade reports 30% losses through waste in the food processing industry

Development Transition

- Most young people do not want to become farmers. They see the toil experienced by their parents and grandparents. Mechanisation can reduce this drudgery and increase the appeal of farming. Some consolidation will also be necessary to allow optimum farm size, and this is only possible if farmers have title over land. Mechanisation requires investment, which again is unlikely if tenure is uncertain.
- Increasing urbanisation is a challenge as it converts land and removes labour from land, whilst also removing labour from rural areas. But this process is also an opportunity for intensification and urban production, for instance urban horticulture gardens and hydroponic systems for organic fruit and vegetables.

The Forestry Sector

61. REDD+ could be an important driver of change, to address more fundamental problems in the land use sector in Indonesia, such as degraded forests, low productivity, poverty of forest dwellers and unclear tenure. To date, the private sector has been slow to invest in conservation and restoration. For instance, the take up of the ecosystem restoration concession license (ERC) is less than 200,000 ha, despite there being around 30 million hectares of degraded production forest. At the same time, a considerable number of applications are pending in the Ministry of Forestry. Currently, these ERCs face the same bureaucratic hurdles and expense as if they were taking on an area of richly-stocked forest. There is a need to restructure the regulations considering that they are not wholly profit-oriented, so it should be treated differently from a regular timber concession
62. What many refer to as the 'rent-seeking government' has created an atmosphere of regulatory uncertainty and bureaucracy. After five years of REDD+, the private sector is losing faith in the government's seriousness. The whole project now seems to be in limbo as illustrated by the Rimba Raya case.[5] Project developers complain that there is a lack of understanding of real business issues by government, as well as over expectation of the money that can be made from REDD projects.
63. The unclear land tenure is a serious constraint. This is partly caused by a failure to recognize pre-existing local rights over land, especially forests, and to assume that large areas can be re-designated by central government, or re-zoned by local government without local participation. This allows plantation and mining companies to

"To date, the private sector has been slow to invest in conservation and restoration. For instance, the take up of the ecosystem

[5] The Rimba Raya Biodiversity Reserve REDD Project was designed to conserve 91,000 hectares of tropical rainforest and peat swamp in Central Kalimantan and issue the world's first REDD credits under the Verified Carbon Standard (VCS). Buyers for many of the expected carbon credits were in place: the Ministry of Forestry however, reduced the concession area to 46,000 hectares, allowing the other half of the land to be used for palm oil development.

restoration concession license (ERC) is less than 200,000 ha, despite there being around 30 million hectares of degraded production forest. At the same time, a considerable number of applications are pending in the Ministry of Forestry."

access land cheaply, which is a form of subsidy that inhibits efficient land use and local economic growth.

64. The only source of capital for REDD+ currently is donor funding and the voluntary carbon market. Once there is a larger market for forest carbon credits, REDD+ project developers should be able to raise capital to expand. Some developers are calling for donors to provide a carbon off-take promise, for example Advance Market Commitment, but this may not address some of the fundamental methodological problems with attempting to turn forest carbon into a tradable derivative on the open market.

65. Forests are essentially a continuum, from primary to monoculture, via a complex array of forest types, especially agroforestry. Clean delineations such as the forest/non-forest bifurcation are not realistic or helpful. Planted forests have a bad reputation as monocultures, but they are a good source of wood and need to be included in the mix. Although they should not expand at expense of primary forest.

Central Kalimantan

66. Central Kalimantan is a REDD+ Pilot province as part of the Letter of Intent with Norway. The province is 15 million hectares in size and has a population of about 2.3 million, many of them indigenous people living in villages in the forest. They are often engaged in slash and burn activities, and the province hopes that REDD+ project can alter this practice.

67. Where investment is taking place, for instance in mining or forestry, disagreements over boundaries and land access rights are causing disputes between investors and local people. Some experts and local leaders warn that if these problems are not resolved, there will be increasing incidents of conflict, which is damaging for society and of course likely to deter investors.

"The new REDD+ plan states that there should be a bold and affirmative policies on community based economics, as a policy in partnership with private and state enterprises."

68. One of the reasons this province was chosen as a REDD+ pilot is that it already has plans for large scale forest conversion. There is a risk that these plans may have limited long term economic benefit and will be unwise from a social and environmental point of view. The Province now accepts that these plans will not be sustainable if they detach local livelihood from its surrounding natural resources. The new REDD+ plan states that there should be a bold and affirmative policies on community based economics, as a policy in partnership with private and state enterprises.

69. The new plan stipulates that timber production should come from plantation forest and the role of natural forest is shifted to non-forest products and services, with development of a community wood based industry. Access granted to the land and forest resources for both timber and non-timber commodities should have a business rationale, not government program oriented approach. The plan will focus on strengthening financial access through a collateral guarantee fund and interest rate subsidy; tenure access with land titling, community based and collaborative management; and market access through certification and value added processing.

Creating the conditions for sustainable development in Indonesia

a) The role of governance and planning

70. Some predict we are entering an 'era of volatility', driven by the following issues:

- Rapid urbanisation, at a rate that is the equivalent of adding a city of one million people every week for the next 30 years.
- The food-water-energy nexus: unconventional energy, such as shale gas and biofuels, need more water than conventional fuels.
- Slow uptake of new technology, requiring 30 years to apply, because of inertia and path dependency. For instance cars are an embedded legacy, because of the huge installed base.
- At a global level, the energy lost by the system is almost the same as the amount used; improving efficiency is as important as finding new sources of energy.

71. Depending on certain risk factors, such as political decentralisation, rule of law, economic nationalism and inequality, Indonesia may face two possible scenarios:

- **'Scramble' or reactive change:** Uncertainty and poor planning lead to under investment in alternative energy. Economic growth is volatile as the economy is exposed to cyclical shocks. The long term growth rate is lower than the potential

growth rate, exacerbating poverty and divisions in society.

- **'Blueprint' or coalition of interest:** Political leadership and workable long term regulatory choices facilitate a transition to a low carbon economy that combines growth with equity. This leads to a transformation of energy systems with a profound impact on mobility, buildings and electricity generation. Economic growth is high and stable, which enables more effective poverty reduction. Success will not just be about technology; it also needs demand reduction and behaviour change. Tackling waste and inefficiency in all parts of the system will be crucial.

72. Does the government aim for 'green growth' or 'greening growth'? Or, is low carbon development about doing the same things differently, or doing completely different things? A government needs to work out how to turn priorities into action and then devote investment to it.

73. Successful implementation of low carbon development in other countries has shown that creating 'clusters' is a way to allow the private sector to coagulate around shared access to energy, clean technology, infrastructure, access to markets and investment. It implies a more organic process of private and public sector entities building on some specific strengths or source resource, such as geothermal, and then building networks that connect to existing markets and resources. This 'cluster' approach could provide an alternative to the 'corridors' envisaged by the Indonesia Master Plan (MP3EI).

b) Creating jobs and prosperity in a low-carbon world

74. A road map to a low carbon future can be broken down into the following key areas, with some examples of action that can be taken in Indonesia and anticipated outcomes:

Key focus areas	Examples of action in Indonesia
People's Values	Behaviour change
Human Development	Inclusive and equitable access to services
Economy	Recalibration of subsidies to reflect true costs, long term financing models
Agriculture	Training, access to technology, increasing yields and reducing waste
Land use and land allocation	Tenure reform, locally controlled forest enterprises, balanced landscape approach
Energy and power	Lower cost of renewables, increase demand-side efficiency, extend access using clean and smart technology
Buildings and infrastructure	Aim for total resource efficiency in design
Mobility	Improve connectivity between the islands of Indonesia using integrated lower carbon transport networks
Materials	Value chain innovation, mineral extraction includes costs of full land restoration, phase out open dumping of waste and land fill

"Education and training will be critical. The private sector can play a role, but they need a clear vision from government of sectors where development will be prioritised."

75. Creating sustainable employment is key, which means shifting activity and employment higher up the value chain – as Malaysia has done. Education and training will be critical. The private sector can play a role, but they need a clear vision from government of sectors where development will be prioritised.

76. At the moment much of Indonesia's economy depends on low value-added activity such as agricultural commodities and mining. How can we leverage this to invest in higher value activity? How can Indonesia compete in wider markets? One area would be around food and energy, both will be under pressure in a world of 9bn people, and Indonesia's resources can help meet both. Food security will be increasingly important.

77. A key ask from business will be to avoid Indonesia becoming a high carbon "dumping

ground". Despite slow progress under the UNFCCC, there are signs of countries around the globe moving towards low carbon, resource efficient economies. Within a decade both China and the USA are likely to have restrictions on high carbon trade. Indonesia will need to keep up to avoid being frozen out of key markets.

78. There is a looming energy gap between fossil fuel supply and energy demand in Indonesia so energy efficiency and expanding supplies from renewable alternatives will be important. A key point for GoI is how to factor in flexibility while giving robust signals to business. Government needs to communicate its vision and give adequate policy certainty, but also needs to be able to adapt, learn from experience and respond to change. Continuing to tackle corruption is critical, both for a green economy and wider economy. Corruption acts as a brake on innovation and entrepreneurship.

79. Whilst global negotiations are important, they must be backed by measures closer to home. In a PwC survey of 141 chief executive officers (CEOs) worldwide, 90% signaled that regional or national regulation and fiscal measures, along with private sector investment, are the most effective mechanisms for driving change.

80. In the same survey, affordable energy was identified as the most important issue for CEOs in 2012, followed by sustainable consumption and resource scarcity, equality and social inclusion. These are very similar to the concerns expressed by Indonesia's government. They encompass the same broad goals: affordable energy fuels growth and development, but need to take place in the context of efficient resource use and equitable distribution. Growth without equity is bad for society and for business.

81. Some companies are beginning to integrate so-called 'triple bottom line principles' into their strategy, with a balanced focus on financial, social and environmental issues. However, in countries such as Indonesia this kind of thinking is largely confined to the CSR activities, and is not yet mainstream thinking at the strategic level.

82. To change private sector priorities, there is a need to get the incentives right. Australia has done this with its Carbon Tax, so emitting carbon is priced appropriately. This funds the 'Clean energy finance corporation', which can take risky positions in low carbon finance. The Indonesian equivalent to this may be found in the government's investment fund (PIP).

"To change private sector priorities, there is a need to get the incentives right."

83. There is no luck or inevitability in the transition to a low carbon economy; it takes planning and investment. Those left behind will likely experience economic decline, with stranded assets and goods they cannot sell into richer markets because of non-tariff barriers that punish high carbon intensity.

c) Stimulating Investment

84. Availability of finance for low carbon development is often cited as a problem. Some question whether this really is a liquidity issue, or actually a consequence of the poor investment climate for low carbon technology in Indonesia, for instance as a result of weak governance. This is a multi-tiered issue, from communities to district, provincial and national governments, as well as international arrangements. Different forms of governance and different types of financial flows are needed for each level. An international agreement can give incentives to the private sector but local action can do this too. In the meantime the private sector is anticipating that REDD+ will succeed

85. For private investment to flow there are a number of pre-conditions, including legal certainty and the right investment environment. Proof of the concept is also important, and public finance is of significant importance in this regard to unlock private flows. There are many options for channeling finance, but it may be preferable to build on existing channels rather than create entire new finance systems. This can also help to mainstream climate change into planning and development. Links between finance and MRV are also critical. This is key part of the investment environment and creating transparency. It may be perceived by some countries as sovereignty issue, but investment is unlikely to be unlocked without proof of returns.

86. The key challenge with finance flows is how to incentivise action that changes behaviour, but in a way that also addresses poverty and economic disparity and ensures local communities who own resources receive the benefits. Another concern is that the system needs to be designed not to expose communities to take unnecessary risks. That may mean national distribution mechanisms rather than direct market engagement with communities.

d) Carbon pricing & international agreements

87. A post-Kyoto international deal remains in the negotiation phase. Previous instruments are losing momentum, for instance the clean development mechanism is in decline. The focus thus switches to bilateral deals. In international negotiations, Indonesia emphasises the need for finance, capacity building and technology transfer. Japan is showing leadership in this respect, planning bilateral carbon offset deals that bypass the CDM mechanism. This will involve 30 projects in Indonesia, to be launched in 2013.

88. The target of 'sustainable growth with equity' needs collaboration with other countries, but it may be better to build on evidence of practical domestic action when trying to persuade other nations to take action. There is still a sense that developing countries are trying to calculate the 'willingness to pay' by developed countries, based on the notion that emission reductions are cheaper to achieve abroad than at home. This perception may be out of date, as developed countries begin to realise that there are co-benefits to taking action at home on decarbonising the economy, rather than sending precious investment capital abroad. There are examples of unilateral action by other countries, for instance Australia has a carbon market for agriculture, aimed at reducing methane and nitrous oxide, which is also designed to benefit indigenous people. But such markets rely on strong property rights, and are hard to transfer to Indonesia.

89. Indonesia cannot rely on donors and philanthropy, as the sums involved are not large enough to be a game changer. There may be a need to change the traditional bilateral aid relationship, which is perceived to focus on providing studies and consultancies, rather than addressing the political economy. This implies a move towards partnerships that unlock Indonesia's existing assets, both natural and financial. Indonesia has hidden wealth in the rural economies, unrealised yield improvements; value added opportunities, and the huge scope to reduce transaction costs in the economy. All these opportunities could feed into boosting rural economies, thus changing the economic incentives for the people that are at most risk from climate change, and are at the heart of any action to mitigate it.

90. The Norway Letter of Intent should be an example of this new form of partnership that breaks with the old ODA paradigm, but because the money is not channeled through GoI, it is not being spent on the activities required to bring about the necessary changes. Spending government budget may be difficult, but spending ODA can be even harder because there are so many different agencies involved in the process. But donors are reluctant to change this approach because of Indonesia's past problems with transparency and accountability.

e) Aligning subsidies with low carbon goals

91. The fuel subsidy is in effect a negative carbon price; while other countries, such as Australia, are levying carbon taxes, Indonesia actually pays consumers to emit carbon. Everyone knows the price of fuel is too low, but as the recent attempt to reduce the subsidy illustrated, the process is highly politicised. Until this is dealt with, renewable energy investment cannot compete with subsidised fuel and electricity without receiving even higher subsidies and feed-in tariffs. Eventually the burden of all these subsidies will be unsustainable within Indonesia's current fiscal framework, unless the country decides to take on more public debt. It would be better if the subsidy was redesigned to favour green fuels rather than legacy fuel. A well-designed fiscal system can influence behaviour by encouraging 'greener ' and more efficient resource uses.

92. Even if resistance from parliament prevents GoI from reducing the subsidy immediately, it may gain some positive effects by sending a clear signal that elimination of the fuel subsidy is inevitable sooner or later. This will have some effect on longer term investment decisions. Some in business point out that the recent indecision over the subsidy does not inspire confidence that the Indonesian political system will permit such a change.

"Even if resistance from parliament prevents GoI from reducing the subsidy immediately, it may gain some positive effects by sending a

93. Opposition to reducing the subsidy is often based on the argument that the money saved will not be used to benefit the people or solve the issue of burgeoning fuel demand. For instance the government of British Columbia in Canada introduced a carbon tax four years ago by reducing income taxes, with the slogan 'Tax what you burn, not what you earn'. While the scope for income tax reductions in Indonesia may be limited with tax-payer registration low, a practical policy response could be to provide a Mass Rapid Transit (MRT) system in Jakarta as a *quid pro quo* for reducing

clear signal that elimination of the fuel subsidy is inevitable sooner or later. This will have some effect on longer term investment decisions."

subsidies, and explain the benefits clearly to the public. Other countries have achieved this by communicating clearly how a reduction in subsidy will actually save citizens money over time. There may be some path dependency because of the installed base of vehicles that are not very fuel efficient; in Jakarta a standard car apparently costs half the price of a hybrid. The fuel price rise will probably not greatly influence middle class in terms of miles travelled; only an MRT alternative can do that, but it may influence future vehicle purchase.

94. It is hard to assess how ready the Indonesian public is to accept a carbon price in the economy. If the private sector is reluctant, it is unlikely to happen, given that business is quite a powerful lobby. Yet the Ministry of Environment is understood to receive positive signals from the business sector that it wants to 'go green', with the caveat that it must be pro-growth and pro-jobs. Anecdotally, it is larger companies that are in favour of scrapping the subsidy, as they see the broader fiscal picture. Small companies, on the other hand, tend to see only their immediate benefit from the subsidy and how its removal will have short term impact on bottom line. Both the public and private sector have a role in changing attitudes, not only to the subsidy but to green living in general, for instance by overcoming the reluctance of people to walk very short distances or use public transport in the case of the middle classes or more affluent. But behaviour change needs more than cajoling. In the case of walking in Jakarta, it also needs decent sidewalks.

95. The Australian experience is that businesses are looking for certainty and a map into the future. Changes in taxes and subsidies are not necessarily bad in themselves, but each business needs to work out how this will affect the cost base, and they then adapt accordingly. Some businesses with a direct advantage from subsidies will lobby to keep them, such as car manufacturers, but this is not always the case if they can see that the subsidy is damaging to the economy, reducing long term economic growth and consumption patterns.

"Decentralisation is a potential obstacle to shifting Indonesia onto a low carbon development path. There are approximately 500 local governments, with a high degree of autonomy. In this context, master plans devised by the centre are difficult to implement."

f) Decentralisation and localism

96. Decentralisation is a potential obstacle to shifting Indonesia onto a low carbon development path. There are approximately 500 local governments, with a high degree of autonomy. In this context, master plans devised by the centre are difficult to implement. Rather than reaching goals through a command and control system, coordination between every region is key, alongside the need to monitor the performance of every region and district.

97. Decentralisation is a fact of life in Indonesia and it will not be rolled back. In this situation, top-down policies are not sufficient, as policy makers need to influence and persuade across the whole spectrum. Sending economy-wide signals with fiscal policy, for example the principle that 'the polluter pays', the central government can influence all decision makers, and the outcome of individual investment decisions, without needing micro-management. Shared goals can be set centrally but met with local initiatives that reflect local needs and resources. Some have pointed out that central government planning is still about facilitating access to natural resources using 'corridors' (as in the MP3EI master plan), rather than building local economies around appropriate and efficient energy usage.

98. It seems that economic decentralisation has lagged behind political decentralisation. The answer may be to emphasise the importance of building local sustainable economies that are less dependent on transfers from the centre. Rural communities argue that they do not get benefit from the fuel subsidy, as in practice fuel and energy prices are much higher than they are in Java. Reducing the subsidy and investing the proceeds into smallholder agriculture and strengthening local spatial planning and landscape management could have significant benefits.

99. Often the high price of diesel is because of the transport costs. If the plan is just to switch diesel with alternative fuels, such as biofuel, then the underlying problems remain in place. Local renewable energy generation, by community-owned or joint venture utility companies, would yield local economic benefits that reduce dependency on the centre. Local ownership may also go some way to solving the land disputes that often impede these projects. Keeping the generation close to the fuel production will keep costs down, and co-locating it with economic clusters will magnify the available benefits.

Recommendations

100. Indonesia is a developing country, with aspirations to eliminate poverty, disease and hunger and reach standards of living that are now commonplace in advanced economies. It would not make sense to undertake a development path that may impose costs on the economy and inhibit progress towards the goals of advancing human welfare. If mitigation of carbon emissions costs jobs and growth, then it may be too high a price to pay. However, it is likely that many of the necessary changes yield more benefits than costs. A useful thought experiment is to ponder this: if a new technology was discovered tomorrow that solved climate change overnight, would the general recommendations for Indonesia's future development change? In many ways no – there would still be the same emphasis on energy and resource efficiency, tenure reform, governance improvement, higher skills and training, and growth with equity. There are some specific recommendations and policy options that flow from this:

"It would not make sense to undertake a development path that may impose costs on the economy and inhibit progress towards the goals of advancing human welfare. If mitigation of carbon emissions costs jobs and growth, then it may be too high a price to pay. However, it is likely that many of the necessary changes yield more benefits than costs."

i. The problem of high transaction costs and corruption (the 'high cost economy') is a systemic problem in Indonesia; tackling this will have positive impact not only on renewable energy but on all sectors.

ii. Green growth has the potential to be more effective than other policy measures, for instance the mining law on value added processing, at moving Indonesia up the value chain. Combined with local economic clusters, it has the potential move people into jobs that are valued by capital, rather than just created by government spending. Clusters may be better than 'corridors' at creating the solid foundation for equitable growth outside Java.

iii. Consideration should be given to ways of opening up the power generation sector so that it is not held back by the PLN monopoly. Local communities should be encouraged to set up and operate their own renewable energy facilities.

iv. GoI communications strategies should build on the National Action Plan for Reduction of Greenhouse Gas Emissions (RAN-GRK) to explain the composition of the 26/41 emission reduction target, so the private sector knows which sectors will be targeted, what impact this will have on their businesses, and where the investment opportunities will lie.

v. There is a need to overcome the perceived opposition between conservation and sustainable growth. By aiming for sustainable production of food, fuel and fibre, in the context of good landscape management and local economic development, the broader goals of conservation will be met without needing to restrict local peoples' access to resources. Furthermore, degraded land within the state forest can be brought back into productive use for both food and energy.

vi. Development policies should prioritise optimal growth, rather than growth at any cost. The objectives 'pro-growth, pro-jobs, pro-environment and pro-poor' aspirations need to be more concretely translated into implementable plans. 'Sustainable growth with equity' is an impressive goal, but civil society is looking for recognition that equity in this sense means both justice and fairness.

vii. Financing policies need to be designed to stimulate widespread low carbon development and assist local communities to implement low carbon farming practices. For instance adaptive technologies for increasing their benefits in good climate (normal years) by protecting them from the risks of the worst years (bad climate), such as climate index Insurance

viii. A new form of partnership with donors needs to focus on investment in climate resilience and low carbon development.

ix. There needs to be active engagement with politicians at all levels, from the regional assemblies (DPRD) to the national parliament. Encouraging a more active stance towards oversight of workable and professional spatial plans (RTRW) that are coordinated across provincial and district borders will help ensure a total landscape approach to planning.

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Wilton Park | 15 October 2012

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