Post-disaster Reconstruction and World Trade Mechanisms: An Agenda for Enquiry

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Abstract

Disasters' costs have risen dramatically in the last two decades, suggesting an increase in economic vulnerability. In 2011 alone worldwide disaster costs reached 380 billion dollars. Meanwhile, liberalisation of international trade has greatly increased economic interdependencies between countries. It is highly likely that trade liberalisation is linked to increased hazard vulnerability and costs but also represents opportunities for disaster recovery and reconstruction. This paper explores the nexus between international trade and disaster reconstruction. The focus is on the reconstruction market and how this relates to global trade arrangements. A review of international trade and disaster management literature was conducted and common themes were identified. The results were then applied to the case study of Pakistan. Almost no papers exist that specifically analyse how a country's trade situation impacts their capacity for post-disaster reconstruction. However, there is evidence that reconstruction costs rise following a disaster, quality of materials falls, and there are multiple resourcing challenges that delay reconstruction and increase costs. International trade could guarantee quality materials at international standards, stabilise costs, and speed up reconstruction. However, the evidence shows that international trade is rarely considered in the disaster management field, and disaster management is rarely considered in the formulation of trade policies. Therefore, mechanisms are needed to facilitate an international trade-based response to disasters. To be effective, these mechanisms need to be formulated and agreed upon prior to a disaster occurrence.

Keywords: International Trade, Post-disaster, Reconstruction, Pakistan Flood, World Trade Organization.

Introduction

Exchange of capital, goods and services is integral to the modern global economy (Andersen, 2003), and free trade has been promoted as an elixir of economic growth by international organisations such as the World Trade Organisation (WTO) and the World Bank. However, liberalisation of international trade has greatly increased economic interdependencies between countries. In the context of disaster management this means that once isolated events may now have far reaching effects. Meanwhile, trade liberalisation has likely contributed to the increased hazard vulnerability and associated costs of disasters, which are rising year-on-year. Questions of disaster management are therefore of increasing importance to policy makers (Hill et al., 2008).

For example, in 2011, global disaster losses were estimated at USD 380 billion, prompting the World Bank to commission a special report on better ways to deal with the spiralling

costs of disasters (World Bank, 2012). Nevertheless, trade liberalisation also represents opportunities for facilitating disaster recovery and reconstruction.

It is widely recognised that reconstruction is an essential part of the disaster and emergency management cycle. Effective and timely recovery and reconstruction helps communities get back on their feet after a disaster and reduce future vulnerability. Timely recovery and reconstruction depends upon the availability of adequate and appropriate resources. Successful access to resources for post-disaster reconstruction can be mediated through: 1) Resourcing Facilitator (legislation and policy); 2) Resourcing Implementer (construction industry); 3) Resourcing Platform (construction market); and 4) Resourcing Access (transportation system) (Chang et al., 2010a). To some extent, all these factors will be influenced by the international trade situation of a country, and therefore a country's recovery and reconstruction is linked to its trade policy. Previous studies show that a lack of adequate legislation and policy packages after a major disaster could substantially limit the recovery progress and hinder reconstruction resource procurement and utilisation (Chang et al., 2010).

We argue that in an increasingly globalised world, the lack of attention paid to disaster management when formulating international trade agreements could significantly hinder the quality and speed of recovery and reconstruction. Not only do disasters kill people, damage buildings and disrupt production systems in the impacted countries, but they also create instability in international trade through damages to international trade infrastructure and countries' export and import capacities (Gassebner et al., 2006). This could create major resource obstacles for recovery and reconstruction in countries that are economically dependent on international trade, especially in the absence of facilitative international trade agreements.

This paper explores the relationship between international trade and disaster recovery and reconstruction from the perspective of global trade arrangements. An exploration of the nexus between international trade and disaster reconstruction is followed by a case study of Pakistan.

Disaster Reconstruction and International Trade

Disaster Recovery and Reconstruction

Successful disaster recovery and reconstruction is very much linked to the conditions of the country's domestic economy, foreign trade, and trade infrastructure (Benson and Clay, 2003). Most large disasters such as hurricanes, floods, earthquakes, and pandemics disrupt production systems that could result in short term or long-term decreases in the production of goods and services. Reliance on locally sourced reconstruction materials in this context can result in goods' shortages, provision of low quality goods, high price fluctuation and difficulties in tracing the legality and sustainability of building materials (such as illegally logged timber). For example, after the Indonesian tsunami several studies noted that timely supplies in Ache were inadequate so timber had to be imported from abroad (Silva, 2010); however, international actors did not have the appropriate skill sets to import timber. Also, it was identified that at the peak of reconstruction after the Sichuan earthquake, the price of bricks rose 127%, aggregate 125% and cement 30% due to lack of supply (Amaratunga and Haigh, 2011), and after Hurricane Katrina, reconstruction costs increased between 10% and 40% (Olsen and Porter, 2011). Post-disaster response and recovery may therefore increase demand for goods and services, creating shortage of supply and excess of demand resulting in higher inflation rates, national budget deficit, and imbalances in foreign trade. These economic impacts can result in severe bottlenecks for reconstruction such as escalation of building materials prices, quality defects, cost overruns and delivery delays (Chang et al.,

2010). A resourcing facilitator, in form of World Trade Agreements may ease some of these problems (see fig.1); however, research in this area is practically non-existent.

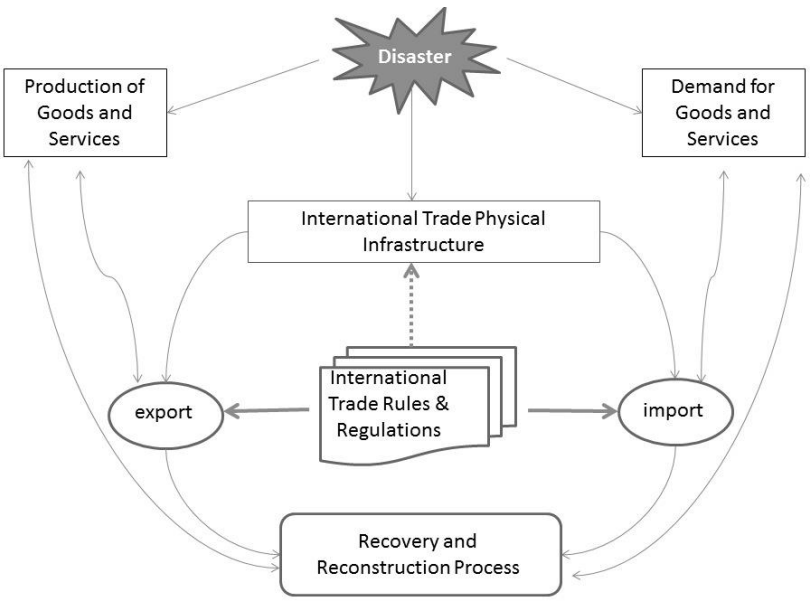

Figure 1: International trade rules and regulations and disaster recovery and reconstruction.

Disaster Reconstruction and International Trade

The availability and cost of reconstruction materials and equipment will depend upon the domestic productive capacity and the trade situation regarding the import of materials from abroad. Easily importing materials can stabilise domestic prices and provide access to resources from abroad (Ninno and Dorosh, 2001). If the reconstruction industry (Resourcing Implementer) has greater access (Resourcing Access) to markets (Resourcing Platform), it allows them to proactively plan adaptive disaster procurement strategies into supply chain strategies (Amaratunga and Haigh, 2011). Relying on domestic sourcing strategies (due to damaged trade infrastructure and/or lack of financial resources) may pose secondary hazards. For instance, trees inappropriately cut down for reconstruction increases flood and landslide risk (Amaratunga and Haigh, 2011); thus imports may reduce pressure on natural environments. On the other hand, if long-term openness to imports risks undermining local construction industries through global competition, serious erosion of local skills needed for reconstruction will occur, and this could be counter-productive.

Demand for companies with access to overseas markets is less likely to be severely affected by a disaster as long as their supply chain is not affected and export is still logistically possible, i.e they can still sell their goods to other markets. If preferential foreign market access was enacted during the recovery and reconstruction period, this may help stimulate and expedite the reconstruction as foreign direct investment (FDI) flows would increase to take advantage of a new trade situation. If exports could be subsidised in the short term, industries may remain competitive in global markets and not lose their market share; losses of market share are often difficult to re-establish (this has the essentially the same effect as preferential market access) but is normally not allowed under the WTO rules. While countries must import to reconstruct and to compensate for shortage of goods caused by disruption in domestic production systems, exports often fall due to disaster damages. This can result in a balance of trade deficit. Although the deficit can often be financed through long-term loans, repayment can have long-term developmental consequences.

Furthermore, export-orientated countries often run persistent trade deficits; it is therefore doubtful whether these countries will be able to finance large-scale disaster reconstruction without a prohibitive increase in borrowing costs. The inability to finance post-disaster reconstruction is known as a ''hazard resource gap'' which affects countries such as Bolivia and the Dominican Republic (Freeman, 2003). Import policies that lower reconstruction costs may help reduce the hazard resource gap by decreasing the cost of reconstruction. Moreover, preferential access for exports to overseas markets (resourcing facilitator) may help balance the deficit and reduce the reliance on loans, and foreign direct investment in reconstruction may also increase, most likely aiding reconstruction and further developing export markets.

International Trade Agreements and Disaster Reconstruction

The WTO mediates trade relations between member countries through international law and promotes free trade. States that are members of the WTO benefit from reduced tariffs, a common regulatory framework and a dispute resolution mechanism, which is (arguably) autonomous and balances disproportionate state power through the application of trade law. The WTO regulates multinational trade under the Most Favoured Nation (MFN) policy, which stipulates that an increase or reduction in tariffs must apply to all WTO members. Therefore, one country cannot discriminate against another. In return for WTO membership, states lose autonomy, meaning that in the aftermath of a disaster, they are constrained in their policy options and cannot, for example, subsidise industries during recovery (this is simplifying a complex legal situation, but the spirit of the WTO law is accurate).

Viewed through the lens of disaster management, recent developments in how trade agreements are negotiated between countries and regions may exacerbate or mitigate the capacity for reconstruction. Following World War Two, most trade agreements were multilateral through MFN; however, regional and bilateral free trade agreements (FTAs) have soared from 70 in 1990 to over 300 by 2012 (WTO, 2011). FTAs mean that countries can reduce tariffs between each other without extending this privilege to other MFN countries. Thus FTAs signed between *other* countries can have significant wide reaching effects. For example, if a major trading block like the EU signs a FTA with India, this may decimate exports from competing countries such as Pakistan or Bangladesh (Ahmad et al., 2009). Countries must now decide the terms and conditions of the FTAs they wish to sign up to and, in addition to a range of other factors, it is pertinent to consider how FTAs could affect disaster reconstruction. Identifying economic sectors, which could be helped by special international provisions to deal with disasters, is important in a globalising world.

In this context, recovery and reconstruction should include not only the physical reconstruction of houses and buildings, but also the recovery and reconstruction of production systems, and international trade components of the economy. Therefore, the role of international trade rules and regulations becomes paramount. The recovery and reconstruction strategy should include measures to immediately improve the international trade for short-term as well as long-term recovery and reconstruction. A further agenda of enquiry may be to compare the norms of the WTO with the norms of disaster reconstruction. The WTO attitude to disasters is reactive and there are currently no ex-ante rules or regulations that may help countries to prepare for disasters. The WTO does have stipulations for subsidies after a disaster but these emphasise that payments must do no more than return to an equivalent state prior to the disaster. This may be opposed to other international agencies that promote ‘building back better’.

Reconstruction and International Trade: The 2010 Pakistan Flood

Impacts of Flood on Pakistan's Trade

The 2010 flood in Pakistan was one of the largest flooding disasters in the recent history of Pakistan. Approximately 2000 people were killed and twenty million affected in 78 districts across five provinces (Baluchistan, Khyber Pakhtunkwa, Punjab, Sindh and Gilgit-Baltistan) (Fig. 2). Flooding submerged an area of 160,000 square kilometres (20% of Pakistan) including more than 2 million hectares of cultivated lands, and hundreds of thousands of livestock were killed. Public infrastructure was damaged or destroyed as well as approximately 1.8 million homes and business facilities (NDMA, 2011).

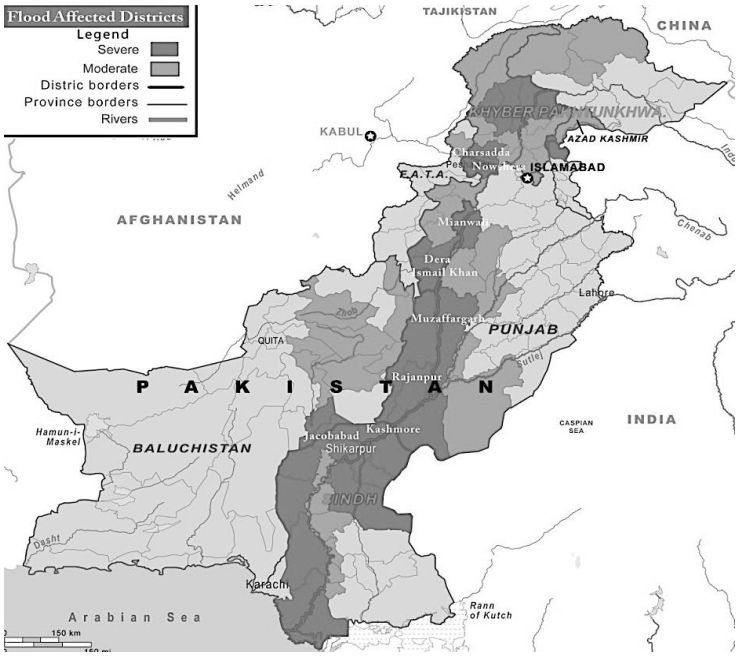

Figure 2: Impacted areas of Pakistan during the 2010 flood. Source: Asgary et al. (2012).

This flooding event continues to pose massive economic challenges for the people and government of Pakistan (WTO, 2012). Estimates show that flood caused a total of USD 10.056 billion in damage (64.6% direct and 35.4% indirect). The agricultural sector suffered the highest losses (50.2%), followed by housing (15.8%) and transport and communications (13.2%). Estimated reconstruction costs could range from USD 6.7 billion to USD 8.9 billion depending on the type of reconstruction strategy (building as before, restoration to flood resistance, and building back better) (Fig. 3). Flooding also caused increased government expenditure that exacerbated the existing budget deficit. This made it even harder for the government to meet the International Monetary Fund (IMF) conditions to cap fiscal deficit (5.1 per cent of GDP) set as a condition for a previous loan that Pakistan received from the IMF in November 2008 to avert a balance of payments crisis following the 2008 earthquake (Bajoria, 2010).

The agriculture sector was heavily impacted by the flood (see fig.3). Agriculture in Pakistan accounts for 60% of the country's exports and employs 43% of the labour force. In particular, the drop in cotton production had a significant direct impact on ginneries' production levels and thus the export of these products. The shortage of cotton was partially met through higher priced imports, which impacted the export competitiveness of the country. Food shortages and other agricultural commodities (i.e. Kharif and Rabi crops) also increased the

need for imports. Increased imports and decreased exports due to the disaster added to the already imbalanced trade conditions (WorldBank, 2010). One way to reduce the trade deficit would be for the government to negotiate concessions in duties to increase exports of Pakistani products into major international markets, especially for the value chains existing in the flood affected areas (World Bank, 2010).

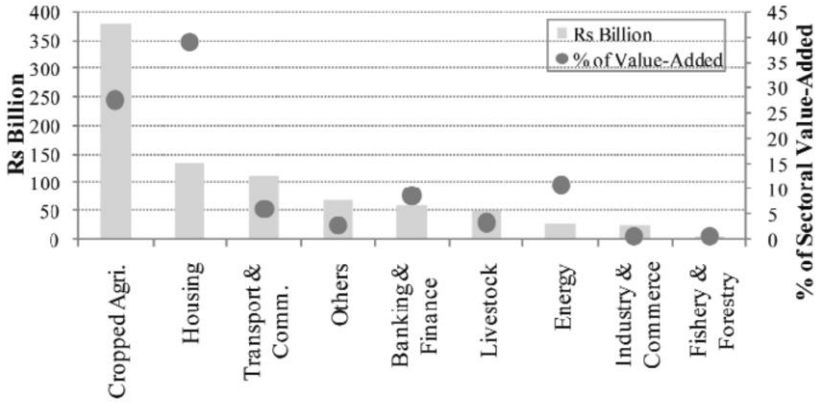

Figure 3: Flood damage by sectors. Source: Looney (2012).

Resourcing Facilitator: Pakistan's Imports

Pakistan has a relatively closed economy and trades little with its closest neighbours. The reasons for this are complex, but a history of military-political tensions and neighbours which export similar products are major contributing factors (World Bank, 2013). The value of Pakistan's imports regularly exceeds its exports and the country runs a persistent trade deficit financed by international loans; in 2012 Pakistan's debt stood at USD 55 billion (Looney, 2012). Because Pakistan's floods increased the trade deficit and lowered the projected GDP growth, there are growing concerns about Pakistan's ability to fulfil its fiscal obligations (Bajoria, 2010).

Pakistan's domestic reconstruction industries are not sufficient to meet the needs of post-flooding reconstruction, therefore goods and services will need to be imported from abroad to cover domestic shortages such as construction materials and equipment (World Bank, 2010). Despite the relevance of the subject, there have not been any studies linking prices of reconstruction goods and trade policies in Pakistan (or in other countries). However, linkages may be drawn from a study by Ninno et al (2001). This study examined rice prices and import policy during the 1998 floods in Bangladesh. The Bangladeshi government reduced the tariff on rice from 2.5% to 0%, imposed limits on the amount of subsidised rice distributed by the government, and expedited the clearance of rice imports (Ninno and Dorosh, 2001). These policies stabilised rice prices following the floods at the import parity price. If Bangladesh was able to stabilise rice prices via changing trade regulations, what opportunities exist for post-flooding reconstruction in Pakistan?

It could be argued that if tariffs are reduced on products where market conditions are favourable and prior trade relationships exist, costs for procuring reconstruction goods will be lower. However there is a caveat. Essential to the success of Bangladeshis rice policy was a normalisation of trade relations with India in 1996. If this normalisation had not happened, then the rice imports should have been sourced from Thailand, which Ninno (Ninno et al., 2001) estimates would have added 21% to the import parity price in Bangladesh, with associated higher rates of malnutrition (Ninno and Dorosh, 2001). It has been argued that the normalisation of trade relations between India and Pakistan could have

positive impacts on post-disaster reconstruction as it provides opportunities for the reconstruction industry to build relationships with suppliers, which will allow proactive planning for procurement strategies in times of disaster (Amaratunga and Haigh, 2011). Promisingly, Pakistan has recently agreed to extend MFN status to India. If MFN is granted to India, it is likely to greatly increase trade between the two countries. The devastating earthquake in 2005 in Kashmir did result in the two countries opening up the border which saved hundreds of lives (Ahmad et al., 2009). However there was no evidence of a similar response to the 2010 floods. Lowering the trade barriers may also attract international firms having knowledge about and experience in building disaster resilient infrastructure. It has to be noted, however, that even if a trade agreement is successful in lowering reconstruction prices, integrated disaster management plans are still essential. In fact, eight months after the disaster occurred, the Pakistani government had not yet produced a reconstruction plan, and most constructions had not even started as non-governmental organisations (NGOs) were awaiting for the plan to begin rebuilding (Oxfam, 2011).

Resourcing Facilitator: Pakistan's exports

Countries need to export so that they can import, and this is because exports provide the foreign currency needed to purchase imports. In the absence of exports, countries need to finance imports through loans in international currency markets. Pakistan has a narrow export base with about 55% of income coming from labour intensive textiles and 25% from agricultural products. The lack of export diversity makes Pakistan highly vulnerable to external shocks, disasters, and fluctuations in international prices particularly for textiles and rice. If Pakistan is to reduce its vulnerability and to successfully manage post-disaster reconstruction, it needs to diversify its export base.

Pakistan's textile sector was badly hit by the flood as it relies on domestically grown cotton. The damage to cotton crops means that the approximately 2 million bales of cotton that were lost due to flood crop damage will need to be imported at higher prices, making Pakistan's already struggling textile industry even more uncompetitive (World Bank, 2010). Under the WTO rules Pakistan cannot subsidise its industry to aid the recovery. Therefore, an alternative solution was proposed: to give Pakistan preferential access to its main export markets in the EU and US to compensate for the economic difficulties associated with the flooding. This move was controversial and is against WTO rules under MFN.

An application for a two year temporary special waiver was put before the WTO by the EU, but this was immediately vetoed by Pakistan's main competitors, Bangladesh and India. After two years of negotiations between the EU, India and Bangladesh the waiver was finally passed in early 2012, two years after the floods. The impact of the waiver cannot yet be assessed but the policy and the time needed for its implementation highlight the need to agree upon trade-based measures before a disaster occurs. There is a possibility that, if measures could be agreed prior to a disaster, with agreed upon macro-economic triggers, then trade measures could be enacted much more quickly as other states would not be able to veto the process.

The US approach to the flooding was to set up 'reconstruction opportunity zones'. This approach proposes that only goods produced in certain duty free zones will be eligible for duty free access. In some ways, reconstruction opportunity zones (ROZs) make sense and may be effective as the impacts of a disaster are normally localised, and if the ROZs are strategically placed, they help those worst affected by the disaster. However, the bill has been consistently blocked by congress and domestic American political considerations continue to block its passage. For example, U.S. textile producers have enough political influence to ensure that tariffs and quotas are kept in place.

The geographically concentrated US approach contrasts with the EU broad-brush approach. Whereas the EU trade deals will benefit those *affected* and *unaffected* by the disaster, the US proposes only to help flooded areas. This is an important distinction, because those unaffected by the disaster may be better able to compete for limited resources during the recovery phase. Therefore, access to external markets may do little to help those affected by the flooding and could even disadvantage flood-affected producers.

The relationship between access to external markets and reconstruction is complex. On the one hand, an influx of FDI due to preferential access to external markets is likely to create jobs and tax revenues for the Pakistani government (which has an anaemic tax base) and bring about technical and knowledge diffusion (Ahmed and Malik, 2012). On the other hand, the lack of FDI in Pakistan has been attributed to poor infrastructure, political instability and an erratic electrical supply (Hossain, 2012). Because access to external markets will not address any of these structural issues, and the floods will likely exacerbate them, it is unclear whether investors will be tempted.

Notwithstanding the positive impact of EU granting Pakistan an enhanced market access for a limited time (one year), export performance is likely to weaken, as the textile sector is impacted by the need to source some 2 million bales of cotton that may have been lost due to crop damage, and a promising new export - cement - will now have to be diverted to domestic consumption. In contrast, reconstruction and rehabilitation will require a significant increase in imports particularly of food, medicines, fuels, construction materials, and machinery. Workers' remittances are likely to continue playing an important role in financing household consumption in Pakistan. Still, substantial external finance will need to be motivated in order to sustain international reserves, which remained steady at USD 12.2 billion at the end of August, 2010 (World Bank, 2010).

Conclusions

It has been argued that in post-disaster situations, prices of reconstruction materials can rise, supply shortages can occur and the quality and sustainability of locally produced materials can be circumspect. In some cases, local procurement of materials may actually increase disaster risks; for example, deforestation is associated with flooding and landslides. International trade could guarantee quality materials at international standards, stabilise costs and speed up reconstruction. Producers having access to foreign markets may be less vulnerable to domestic demand drops following a disaster. Preferential access to foreign markets for producers in disaster stricken countries may aid recovery and finance reconstruction through greater FDI flows. Despite the potential advantages of trade liberalisation, evidence shows that international trade is rarely considered in the disaster management forum, and disaster management is rarely considered in the formulation of trade policy. International mechanisms are needed to facilitate an international trade-based response to disasters. To be effective, these mechanisms need to be formulated and agreed upon prior to a disaster occurrence. Nations should be more aware of disaster management when considering trade policy and empirical research linking international trade, and reconstruction should be carried out so that countries can better negotiate terms of international trade agreements they enter into, and therefore better prepare for disasters.

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