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# Lessons for Asia from Past Financial Crises

*Darson Chiu*

The worst part of a crisis is that we have suffered badly from it but we ended up learning nothing from it. Therefore, it is always a good idea to review and analyze past economic and financial crises that caused significant impacts on the economy and society of Asia.

For the past 15 years, we have experienced 3 major crises: the 1997~1998 East Asian Financial Crisis, the 2000~2001 internet bubble burst, and the 2008~2009 global financial crisis. It is obvious that the most recent crisis caused more severe damages on the global economy, as we are still suffering from its consequences: fluctuating stock markets due to investors' fragile confidence, inflationary pressures originated from looser monetary policies including the so called "quantitative measures (QE)", weaker demand because of consumers' pessimistic sentiment, and unpopular tax hike so as to compensate over spending of expansionary fiscal policies early on.

These 3 major crises have one thing in common, that is they were all triggered by "miscalculating the demand side". By 1997, East Asian economies thought the demand was supposed to be more promising, until they realized overinvestment from over borrowings would cause a very serious trouble. Prior to 2000, speculators assumed the rise of internet sites and tech industries were unstoppable, until the dot-com bubble popped and cost investors huge sums of money. Before 2008, big corporate in the western

world believed they could make everything commodities including the sub-prime mortgages and sell them boundlessly, until they found out it's nothing more than a systemic fraud that provoked a catastrophic financial disaster.

When the demand is miscalculated, the supply cannot be at its right level. And when the supply did not properly meet the demand, there would be misallocation of resources. And we must be aware that when valuable resources are misallocated, woe betides. Woe betides as factories shuts down and unemployment rate increases.

For the most recent crisis, maybe we should put it this way: the demand was both miscalculated and purposely inflated. Why? The sub-prime mortgage was offered to people who did not possess a good credit or any credit at all. However, through the game of capitalism, "lending and borrowing", people with poor credit can borrow and buy houses, and capitalists can gain tremendous profits from trading complex financial packages. Once the bubble burst and everything went wrong, credit crunch inevitably began. Credit crunch means no more easy loans for bad credits and no more excessive profits for capitalists.

In order to address credit crunch, central banks especially the US Federal Reserve operated through interest rate adjustment or via money supply to inject liquidity into the markets. That is when lending and borrowing ran into sand at the time of crisis, the decision makers are trying to stimulate the economy by reviving activities of more lending and borrowing. Ironically, the system failed and induced crisis due to the misinterpretation and misconduct of capitalism, but governments are trying to fix the system with capitalism.

Well, capitalism is wrong or even dead, but capitalism should evolve. Evolving capitalism would be a solution for crisis, also a paradigm-shift for the anomaly. When Lehman Brothers went down all of a sudden, it's actually a sign suggesting that the supply side was not attentive, alert, and sensible



enough. Therefore, we need to be more observant, watchful, and prudent as the demand side is not static any more.

Lending and borrowing are not a sin as long as such conducts can pave the way for recovery or a new economy. By the same token, the austerity approach is not a virtue on the condition that austerity kills the economy, say, in Europe. We need to think fast, critically and outside the box in response to the rapidly changing demand. We have to admit that the demand is more difficult to capture now with respect to innovation and globalization.

Asia did perform better than Europe and US during the most recent crisis. As for past crisis experience and lessons for Asia, we should not be too surprised that there will always be another crisis coming to harm our economy or region, but Asia can be better prepared to reduce or mitigate the damage. For example: after the East Asian financial crisis, we took note that good corporate governance is essential. After the sub-prime and global crisis, we also realize that Asia would slow down the process of copying western style of financial innovation. As Asia is still witnessing the European sovereign debt crisis now, Asia will more likely not rush into Euro style economic and financial integration.

Being a follower is indeed a bad idea. Nevertheless, being able to avoid repeating others' mistakes is not enough. Asia should avoid high leverage and risky financial practices and stay away from suspicious sovereign debt. Most Asian economies have outperformed the US and Euro Zone in recent times. To keep it up, Asian economies especially emerging economies need to launch macro reforms and enhance fiscal health.

In addition to lessons for Asia, I consider another issue also very essential that is how Asia can keep its growth momentum despite continuing weakness in the Europe since the burgeoning of the ongoing crisis. Are we

able to decouple Asia's growth from the current European troubles? With pessimistic business readings lately, I think the answer is definitely no. To keep the growth on track, Asia requires sound and steady global conditions. After all, we are all linked through not only trade but also financial channels, whereas the linkage will become tighter day by day.

For a long time, Asian economies have played the role of world factory by supplying consumption goods to Europe and North America. As the western economies are directly injured by European sovereign debt crisis now, and the demands for Asian products are shrinking as a result. I consider there are two valuable lessons for the Asian economy. First, it is evident that western style capitalism is not perfect. We need a brand new mindset and try to meet the dynamic demand with optimal supply. We should not simply follow the old school economics textbook; we should think more critically and creatively to cope with new anomalies. Second, the Asian economy needs to adopt both roles of suppliers and markets in the future. Over reliance on external demands would only make Asian economies even vulnerable to crises. As Asia is the most populous and fastest growing region in the world, I project that the potential of Asian markets can first pick up the faltering Asian production and then dominate the world demands.

(Dr. Darson Chiu is the Director General of CTPECC.)



# Enhancing Reliability of Supply Chain in the Asia Pacific Region from a SME Perspective

Wayne Chen

*Recognizing the vulnerabilities of our economies to natural and anthropogenic disasters, we reaffirm the importance of enhancing preventative measures, emergency preparedness, disaster resiliency and fostering of scientific and technical cooperation among APEC economies, communities and businesses in this regard. We recognize the importance of easing the mobility of relief assistance in the aftermath of disaster... (and) support the idea of promoting and facilitating business continuity and resiliency planning especially among small and medium-sized enterprises.*

~ APEC 2012 Leaders' Declaration

In the Asia Pacific region, Small and medium enterprises (SMEs) account for 90% of total companies and provide over 50% job opportunities. In addition, SMEs permeate in societies, closely link with communities, people in places, particularly vulnerable groups, e.g. women and the poor, and are flexible that their business operations are adaptable to local circumstances. SMEs, therefore, see as an engine promoting robust, inclusive economic growth as well as a cradle fostering entrepreneurship benefiting societies at large. Given their significance of job creation and serving as

sources of entrepreneurship and growth, SMEs have long been focused in the Asia Pacific Economic Cooperation (APEC) under which the SME Working Group (SMEWG) was established to concert efforts of all APEC member economies for the development of SMEs in the region.

Taiwan government has long experience in assisting SMEs in domestic market as well as in exploring business opportunities overseas. On the other hand, in APEC, Taiwan has been one of the most active member economies in SMEWG and working closely with many APEC member economies on relevant projects. As a result, in 2011, Taiwan proceeded to be the Chair of APEC SMEWG for 2011~2012. Furthermore, Taiwan proposed one 3-year project of Improving Natural Disaster Resilience of APEC SMEs to Facilitate Trade and Investment immediately after APEC announced that projects of longer than one-year time frame are encouraged and accepted for proposals. Taiwan was the only member economy other than USA sponsoring multi-year projects.

This essay illustrates the latest progress and challenges regarding the SME multi-year project sponsored by Taiwan and endorsed by APEC SME Ministers and Leaders.

## **Enhancing SMEs' Resilience to Natural Disasters to Establish Reliable Supply Chains**

Under the trend of globalization, enterprises are able to reduce production cost, access to markets in distance and enhance efficiency of operation. Meanwhile, the changing production pattern also refers to a closely tightened production system consist of supply chains across various countries in continents.

However, in 2011, the great Japan earthquake in March was a very



tragedy, followed by Thailand flooding in July, which both reminded the Asia Pacific region and the world that current supply chains are vulnerable and natural catastrophes are becoming serious threats to regional economy that one node impacted can result in interruption of the whole intertwined supply chains.

Securing reliability of Supply chains therefore is crucial to regional economic development as well as to local industrial development. Recognizing this challenge, APEC announced that establishing reliable supply chains as one of four priorities in 2012 and aligned it with the established vision of APEC--towards a seamless regional economy.

Improving enterprises' resilience to natural disaster is important for securing business operations, but SMEs are constrained to manage such risks due to being short of relevant knowledge and finance. Seeing the needs of SMEs, Taiwan proposed one 3-year project, from 2012 to 2014, to assist SMEs to secure business operation and also facilitate governments to development relevant policy frameworks. There are three objectives of the project, namely 1) to enhance the awareness of SMEs and governments on natural disaster risks; 2) to share best practices and assist SMEs to implement disaster preemptive mechanisms, and; 3) to identify threats and possible solutions for SMEs.

The project will be implemented in 3 phases coordinated by the APEC SME Crisis Management Center (SCMC). By 2012, SCMC will conduct joint study surveying on current status of SMEs adopting business continuity plans in the APEC region. Experts will also finalize assessment of policies of 6 economies, namely, Australia, Japan, New Zealand, the Philippines, Thailand, and USA. In 2013, SCMC will host a train-the-trainer workshop in which government officials, experts and SMEs attended will learn how to establish business continuity plans for SMEs and how governments should

assist SMEs in this regard. Further knowledge dissemination will be carried out in 2014 where workshops will be held in 3 volunteer economies for local SMEs. Good news is that Indonesia already expressed their interests to host workshops in 2014.

## **Collaboration with APEC and non-APEC Stakeholders**

This multi-year project is a landmark for APEC not only for its 3-year time frame which is much longer than ordinary projects, but also for cross-cutting issues it attempts to resolve. The project is to improve SMEs' capacity in managing a wide range of risks initiated by natural disasters and meanwhile improving their competitiveness in the global business arena. At present, natural disasters are much concerned by large enterprises but SMEs. Taiwan kicked off the project from coordinating the public sectors, including governments, APEC fora and non-APEC institutions on this matter before further incorporating private sectors. The approach was adopted to ensure the project to build more reliable regional supply chains and create financial and policy incentives needed for SMEs.

In APEC, the Emergency Preparedness Working Group (EPWG) is one important partner along with SMEWG for the project. In July, 2012, the "APEC Focal Point Network and Expert Meeting on Improving SME Disaster Resilience" was held in Taipei. Under the joint efforts of focal points of SMEWG members, experts and the EPWG Steering Committee, the Guidelines on Promoting SME Business Continuity Plans were developed. Later at the 19<sup>th</sup> SME Ministerial Meeting, Ministers endorsed the project by stating that "(we) recognize the importance of cross-fora collaboration between the SMEWG and the other APEC Forums, Groups and Committees on cross-cutting issues", and urge "APEC fora and governments to cooperate



on assisting SMEs to develop disaster preemptive mechanisms in accordance with the Guideline".

Several other stakeholders are also partnered with the project, including the Asia Disaster Reduction Center (ADRC, Japan), the Asian Disaster Preparedness Center (ADPC, Thailand), the East West Center (US), and the Resilient Organisations (New Zealand).

## **Observations and Challenges**

Promoting reliability of supply chains in the APEC region by ensuring business continuity of individual enterprises seems sensible and intuitive, but at least 3 issues should be resolved to ensure the effectiveness of this project.

Firstly, the project was initiated from a standpoint of governments rather than from a SME perspective. As a result, it is more focused on improving stability of supply chains rather than enhancing SMEs' capacity of risk management in a comprehensive manner. Natural disasters are part but not all of business risks facing SMEs. Effective business continuity plans should enable SMEs to deal with not only earthquake and flooding, but also other risks may interrupt business operations, including vandalism, hardware and software failures, theft, and epidemic diseases. How to establish a flexible/expandable framework for SMEs to develop their own business continuity plans in response to risks facing daily business operations is essential to the success of the project.

Secondly, there are already existing standards for business continuity plans/management conducted by international institutions, e.g. International Organization for Standardization, British Standard Institution and BCM Institute (Singapore). It is crucial for the multi-year project to assist SMEs formulate business continuity plans in line with (or at least incorporating)

established standard/certificate systems. Aligning with existing standards assists SMEs to "sell" their achievement in resilience to their clients and consumers. In so doing, SMEs will not only ensure their business continuity, but reinforce competitiveness in real term.

The last but not the least, one challenge of the project comes from the variety of SMEs across APEC economies. Due to a wide range of industries and places the targeted SMEs belong to, developing a general guideline for APEC SMEs to develop business continuity plans is difficult if not impossible at all. In this light, increasing awareness of natural disaster risks and providing some basic ideas of business continuity management are more feasible for the project. In addition, guidelines and educational materials developed should also be available in different languages for SME users' convenience.

In sum, the project is one ambitious and very meaningful work which will contribute to both security and trade of the Asia Pacific region. Effectiveness of the project greatly relies on international cooperation and partnership between public and private sector for its success. It has potential to carve out a platform for SMEs to strengthen risk management, but more stakeholders, including research institutions, government officials and enterprises must be incorporated and coordinated sufficiently in implementation.



# Thinking Strategies as the Response to Disruptions of Supply Chains

*Mu-Hsiang Yu*

Supply chain disruptions have begun to receive significant attention from all organizations recently. It is more important than ever for those organizations to rethink the future supply chain strategies to cope with the contingencies of supply chains.

One reason for this growing interest is the spate of high-profile disruptions, such as September 11 in America, tsunami in Japan and flood in Thailand during 2011. They caused widespread supply chain and business interruption failures for the automotive and other industrial manufacturing sectors. In addition, supply chain disruptions have brought significant physical costs (e.g., electronic production networks, inventory and infrastructure) and huge financial losses.

Another reason for the growing attention paid to disruptions is that companies are much less vertically integrated than they were in the past, and their supply chains are increasingly global. In this situation, today's companies tend to assemble final products from increasingly complex components, which are procured from suppliers rather than produced in-house. These suppliers are located throughout the globe, many in regions that are unstable politically or economically or subject to wars and natural disasters. In other words, this globalization has led to extremely fragile supply chains.

## **Dispute of Diaoyutai Islands affects supply chains of East Asia**

Regional stability is crucial to the reliability of supply chains. Due to the tense relations between China and Japan over the disputed Diaoyutai Islands, many Asia companies worry that it affects the reliable supply chains of East Asia. It also serves as a wake-up call for all Taiwanese companies to more deliberately evaluate the interdependencies of their global operations.

The close three-way partnership between Taiwan, Japan and China makes the trade war a serious threat to the security of Taiwan's supply chain. Furthermore, the trade war currently being waged between the second- and third-biggest economies in the world could seriously disrupt the supply chain in Asia-Pacific Region, For example, critical auto parts are shipped from Japan to Taiwan, which Taiwanese workers provide with value-added services before shipping them onward to assembly plants in China.

Well-known Japanese companies, including Japanese electronics makers Canon Inc., Panasonic Corp. and Mitsubishi Electric Corp., have suspended their operations at various plants in China following huge anti-Japanese protests across Mainland China. In addition, Japan's Honda Motor Co. and Nissan Motor Co. have also suspended production lines at plants in Guangzhou, Guangdong Province, as well as Mazda Motor Corp., which suspended operations at a plant in Nanjing, Jiangsu Province amid concern over heightened tension with the approach of the 81st anniversary of the Mukden Incident <sup>1</sup>.

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<sup>1</sup> The Mukden Incident refers to an attack Sept. 18, 1931 by Japanese forces on Chinese troops in Shenyang, northeastern China, which marked a step in Japan's conquest of Manchuria and onward to much of China in the 1930s and throughout World War II.



## **Thinking strategies to cope with the disruptions of supply chains.**

So, what kind of strategies can be employed to avoid the unnecessary losses and to ensure operational continuity and quick recovery from the disruptions of supply chains?

First of all, **Managing Supply Chain Risks**: firms can set the effect supply chain risk management policy to maintain business continuity, which is vital to business success in world. For example, TSMC operates an Emergency Business Continuity Plan that respond to a variety of events, including earthquakes and other crisis. This completely helps to reduce any risks and uncertainties at sourcing, manufacturing, storage, distribution and last mile delivery.

Secondly, **Holding Inventory Downstream**: it's better for a manufacturing company to hold inventory of raw materials, but of finished goods. After the Japan disaster or the Thailand flood scenario, It was very common to see companies express that we need to hoard components and intermediates, etc. In fact, it's not an appropriate strategy. It is wiser to plan for inputs from diverse sources than hoard, because the cost benefit of distributed sourcing will far outweigh hoarding in the longer time.

Thirdly, **Cross-border Collaboration**: Companies should leverage trade and economic cooperation arrangements like FTA or bilateral country agreements to build complementing supply chain facilities to ensure disaster recovery is rapid. Until now, although there are only ECFA between Straits and investment protection agreement between Taiwan and Japan, Taiwanese companies may complain that it's not enough for their business interests. However, Taiwan will establish a platform with the Japanese government to fill the gap in the industry supply chain soon, and Key Japanese businesses will be selected to set up production, and research and development bases in

Taiwan. This action will also benefit major Taiwanese-related ODM/OEM makers.

Finally, Establishing the Concept of Sustainability: in today's rampant depletion of resources, we seldom consider aspects on how sustainable our efforts are. If we did not think of sustainability in what we do, we certainly would have been reminded of social and ecological implications in our every day routine. This would have helped us be more vigilant and planned to mitigate the loss resulting from such calamities. Sustainability is not futuristic; it is constantly refreshing the basics.

After establishing the above concept, demand forecasting is still deterministic and routine across various manufacturing segments. This feeds in assumptions that weather in unfavorable economic and natural scenarios. It is therefore essential to bring in haphazard scenario planning to ensure preventive steps are made to the supply chain ahead of crisis, than mending ways after.

The above supply chain strategies can ensure the disaster recovery is rapid and also help manage any future unforeseen scenarios with minimal impact. These strategies can also support regional economies back each other during times of disruption and ensure regional stability is maintained. Supply chains are borderless; let's not be chained by ourself.



## Reducing Post-harvest Losses in APEC

*Eric CHIOU*

According to the report from the United Nation Food and Agriculture Organization (FAO), global population will increase to 9.1 billion by 2050 and food production has to be increased by 70% in order to meet the demand. Nevertheless, due to various constraints, such as decreased arable land, insufficient water resource, and reducing number of farmers, it becomes more and more difficult to resolve the global food needs by merely enhancing food productivity. As a result, how to reduce unnecessary food losses along with food supply chain for boosting food availability without adding extra input has been regarded as an efficient way to improve food supply.

In July, 2012, the United Nations Industrial development Organization (Unido), presented cited studies and indicated that post-harvest losses in Asia are estimated at around 30% of annual food production, valued at \$5 billion dollars. Similarly, post-harvest food losses worldwide account for one-third to one-half of total production, suggesting that at least 100 million tons of food is lost along the food supply chain annually. These statistics indicate that the issue of post-harvest losses has become too imperative to be ignored.

Generally speaking, post-harvest loss means that food loss can be measured in both quality and quantity under the post-harvest system. The post-harvest system covers related activities, including crop processing, marketing and food preparation, and the decisions made by consumers to

either purchase food or discard it. In other words, post-harvest loss is food loss occurred during the process starting from food crop and ending at consumers' consumption. The loss of food quality or the loss of food quantity can both happen in the post-harvest food chain. Additionally, there is a difference between food loss and food waste. The former means that the food could be consumed but not be consumed at retail and consumer stages. The latter implies that the food could be recoverable for human consumption.

Furthermore, for developed and developing countries, the issue of post-harvest loss is perceived and addressed differently. For developed countries, post-harvest loss is mainly a food waste issue, since these countries are likely to have better infrastructure, transportation, and logistic facilities. Meanwhile, they probably have more advanced technologies, such as cold chain system, to preserve and deliver food to markets more effectively and efficiently. Hence, the amount of food loss during the food supply chain is likely to be minimal. Nevertheless, since consumers in developed countries are likely to require higher standards in terms of food quality, this feature may lead to higher food waste due to stricter requirements. According to the latest research survey made by the Natural Resources Protective Association in the United States, it estimates that Americans throw about 40% of food, valued at \$165 billion dollars. This astonishing number suggests that food waste in developed countries is a critical challenge to be dealt with.

On the other hand, developing countries encounter different kind of post-harvest loss. Compared with food waste issue in developed countries, most developing countries do not have sufficient infrastructure and advanced skills and know-how in terms of food preservation, processing, delivery, and etc., which are likely to result in food losses during the process of food supply chain. Therefore, how to promote investment in transportation and infrastructure and how to expand the application of updated technologies in



food processing and preservation become two primary tasks for developing countries to minimize post-harvest food losses.

With regard to reducing post-harvest loss, APEC has addressed this issue in many different occasions. For example, in the 2010 APEC Niigata Declaration on Food Security, APEC ministers pointed out that "We encouraged APEC economies to cooperate in reducing food losses in all stages in the value chain from production and processing to distribution and consumption by sharing best practice," in order to expand food supply capacity. Furthermore, in the APEC Action Plan on Food Security, reducing food losses was also listed in part of pursuing sustainable development of agricultural sector and was taken by Chinese Taipei for subsequent implementation.

In May 2012, during the series of APEC food security related meetings in Kazan, Russia, reducing post-harvest loss, again, become the focal point of discussions. Many economies had expressed their strong interests on this issue and other economies emphasized that this issue should be prioritized for enhancing food security in the region. Chinese Taipei also proposed its plan to hold a workshop in 2013 regarding the reduction of food losses in food supply chain, which was widely welcomed by other economies.

In addition, in the 2012 APEC Kazan Declaration on Food Security, it also indicated that "To achieve sustainable agricultural growth, it is necessary to raise agricultural productivity and decrease post-harvest losses, primarily through boosting investment and actively adopting innovative technologies in agriculture." The proceeding statement highlights the importance of reducing post-harvest losses to be one of a few key solutions to achieve sustainable growth in agricultural sector, which also implies that this issue will continue to be the center of attention in APEC food security in the years to come.

Given the diversity of APEC economies in various aspects, each economy probably has different focuses and concerns about the issue of post-harvest losses. Hence, for seeking common ground on this issue, it is important for APEC economies to have in-depth discussions for building consensus first before searching for solutions. Hence, the workshop proposed by Chinese Taipei not only provides a great opportunity for APEC economies to exchange their experiences on this issue, but also signifies an important step for facilitating capacity-building and promoting best practices-sharing among APEC economies. Chinese Taipei's timely initiative will not merely help ameliorate food losses in the short-term, but also can contribute to the improvement of APEC food security in the long run.



## A Hungry Future

*Chris Huang*

The issue of food is not only a domestic, but is an international issue. The food process has been neglected and needs to be attended to. Many do not realize that the process of sustainable food sources is achieved through high energy consumption and great environmental damage. The efficiency of food has also changed due to modern dietary practices, the increase consumption of meat over grains. City life is on the rise which may topple the balance of sustainability of life due to lack of food. Cities initially were designed so that there would be a sufficient food source allowing people to settle instead of remaining nomads. With increasingly high migration rates to the city, the food consumption is growing exponentially and there is no method to compensate for the masses moving in. Cities no longer have their traditional structuring and require new innovations to keep order. 19 million hectares of rainforest is lost a year to clear land for agricultural uses. This new arable land takes ten calories to produce every calorie of food. The big picture is being overlooked as several nations are only preparing for short term food outage caused by natural disaster or collateral damages of war. These temporary food supplies in negotiated policies and their mechanisms simply will not suffice. Sustainable food to the world is an issue to be addressed immediately.

the topic that food, a life essential entity maybe the greatest threat to a nation's security. His writing discusses how petroleum is to cars as food is to humans. Food sustainability cannot be neglected. In order to ensure survival sufficient measures must be taken to give renewable methods to agriculture as the current approaches ends up using more energy than the return. Pollan explains "the soaring demands for local and regional food will not be able to be sustained." (Pollan 3) It is a prevalent issue that needs more attention drawn to it for change to take place.

A solution is needed to lower the needs of city residents. Right now the majority of people are getting their food supply from large conglomerates who do not acknowledge the environmental damage they create and how soon enough they will not be able to supply all of their consumers. It is frightening to know that more damage is done when producing agriculture than consuming food itself. There is a finite amount of land and resources on the earth; therefore the mindset of just burning rainforest after rainforest to sustain our lives is not feasible. People must improvise for the situation given, considering we are a lot closer to the point of inability to supply our cities. Carolyn Steel is an architect who specializes in urban design whom is also the author of *Hungry City*. Her research started when she made the connection between living and architecture. In her research she has found that the sustainability is at a tipping point within urban living. Cities have grown beyond the expectations of the past. Originally cities were settlements built due to the self sufficient agriculture allowing it to occur. Now as human migrating patterns show that people are moving into the cities, the original providers of food cannot meet the new demand. She explains that "in the pre-industrial world, cities recycled almost all their waste, since most was a direct product of the food system and was much easier to perform."(Steel) Modern day industrialized area has turned the recycling into a complex problem



because the cycle is lost and only waste is coming out of the consumption of food. Steel coins the term "sitopia" which literally translates to food-place, in other words she visions an attainable alternative to the current negative cycle attached to food consumption. The solution she presents is urban farming.

The innovative approach used to combat the dilemma is urban farming movements. Urban farming is a fairly new technique. Local produce and large industrial agriculture does not suffice in providing enough for the people. Urban farming is incorporating farming within the cities; whereas greenhouses are set up within highly populated areas such as cities to grow food for consumption in the cities. This includes fish farming, agriculture (crops), and anything sustainable in a city environment. People think the idea of renewable energy only embeds materials which are consumed by use, but not food we eat. Implementing urban farming will cut the threats of food price jumps and the possibilities of sustainability problems faced in populated areas. Urban farming is when growing your own food is done in an urban setting. They utilize abandoned or useless urban locations such as rooftops, old parking lots, old industrial warehouses, and etc. For instance there are groups like growing power which specializes in finding these formidable locations for implementing the urban farming system. The system uses compost; the groups collect food waste from restaurants and mix it with woodchips creating a reusable material for agricultural uses. Another method they make use of is the symbiotic system; plants are put in a hydroponic system used to raise fish while breaking down their wastes produced making it a reusable.

There is so much opportunity with the upcoming food crisis. The problem has initially begun but it is not too late for actions to be taken. As explained urban farming is a self sustaining method of recycling and reusing food, an energy source. It would be a great way to start campaign for the idea

of urban farming throughout big cities globally and have their governments encourage or subsidize these agricultural investments. The initial start up may be a hefty sum of money but will yield results as it is proven to work. On top of having the farms up and running, the farmers may consult places such as restaurants, dining halls, and many other food waste locations to donate their compost for the purposes of the urban farming movement. In return urban farmers may offer their crop yields at a reduced price giving the food waste locations an outlet to renew the energy (food) they have consumed. This is a highly feasible investment plan for cities to look into. This is an opportunity to transform unoccupied places into a fully functioning recycling center. Cities can be made into much more productive places with urban farms, the merging of agriculture and big cities will create a new frontier for green farming. This movement may be a break through to solving the unanswered problems with food security.

## References

1. Steel, C. (2009). *Hungry city: How food shapes our lives*. London: Vintage.
2. Magazine, M. P. (n.d.). *Farmer in Chief* | Michael Pollan. Michael Pollan. Retrieved October 12, 2011, from <http://michaelpollan.com/articles-archive/farmer-in-chief/>
4. Carolyn Steel: *How food shapes our cities* | Video on TED.com. (n.d.). TED: Ideas worth spreading. Retrieved October 12, 2011, from [http://www.ted.com/talks/carolyn\\_steel\\_how](http://www.ted.com/talks/carolyn_steel_how)





