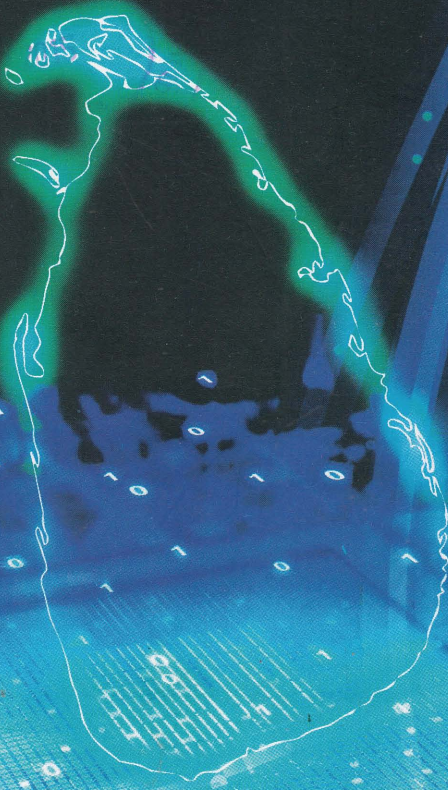


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# ECONOMIC REVIEW

June 2015

The Quarterly Economic Journal of People's Bank



# ICT AND DEVELOPMENT IN SRI LANKA

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# REVIEW

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# BALANCE OF PAYMENT OF SRI LANKA: BPM6 NEW PRESENTATION

by Nandasiri Keembiyahetti

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## Introduction

International Monetary Fund (IMF) introduced the Balance of Payments Manual-6 (BPM6) in 2009, in line with global economic developments, and most up-to-date global changes in analytical frameworks. Sri Lanka is one of the first few countries in the region to adopt the BPM6. The Central Bank of Sri Lanka switched to the new system for the first time in 2013 and has been continuing since then. With the adoption of the BPM6, the Balance of Payment (BOP) presentation underwent number of remarkable changes. Following this development, the BOP format hitherto discussed in the A/L Economics Syllabi will be automatically replaced with the new format. This time Student Page is devoted to discuss some of those significant changes compared to the previous BOP format.

## Balance of Payment

The balance of payments records all financial transactions made between one nation (consumers, businesses and the government) with the other nations in the rest of the world. Accordingly Balance of Payment is a systematic set of accounts recording the difference between total payments to foreign nations, and total receipts from foreign nations over a given time period, usually one year. The receipts from foreign nations arise from exports of goods and services and inward transfers from abroad and capital flows, interest, grants, etc. The payments to the rest of the world arise from imports of goods and services and outward transfers of capital, interest, grants etc.

The BOP typically contains three accounts namely current account, capital account and financial account. Usually BOP is presented in two accounts. You may have a serious look into the two formats given in Table-1 searching where the capital accounts standing. You may find the Capital Account is no longer grouped with the Financial Account. Instead it is grouped with the Current Account. The balance of the Current and Capital Accounts represents the net lending or borrowing position of the economy. Obviously, this is one of the major changes done in the BOP presentation format under BPM-6 revision.

## Current Account

There are no vital changes in current account components except for the income account

and the current transfer account being renamed as “primary income account” and “secondary income account” respectively. (See Table 1)

The Goods and Services Accounts show transactions between residents and non-residents in goods and services. The net balance of these two accounts is known as “net exports” or “net foreign investment”. The Goods Account includes general merchandise and non-monetary gold that are outcomes of production activities. The net balance of this account is known as “trade balance”. Migrants’ personal belongings are not included in merchandise or anywhere else in the BOP as far as there is no change in economic ownership.

The Services Account includes transport, travel, financial services, insurance and pension services, telecommunications, construction, computer and information services, other business services and government services that are not included elsewhere. In addition to the sub-categories under services in the previous format, financial services mostly comprising of bank fees and commissions, appear as a separate subcategory in the new format.

Table 1(a): Simplified Balance of Payment Previous Format		Table 1(b): Simplified Balance of Payment New Format	
		(1) Current and Capital Account	XX
(1) Current Account		(1.1) Current Account	
(1.1) Trade Balance		(1.1.1) Trade Balance	
(1.2) Services Account	XX	(1.1.2) Services	
(1.3) Income Account		(1.1.3) Primary Income	
(1.4) Current Transfer Account		(1.1.4) Secondary Income	
(2) Capital and Financial Account	XX	(1.2) Capital Account	
(2.1) Capital Account		(2) Financial Account	XX
(2.2) Financial Account		(2.1) Direct investment	
		(2.2) Portfolio investment	
		(2.3) Financial derivatives	
		(2.4) Other investments	
		(2.5) Reserve assets	
(3) Monetary Movements	XX		



## Primary Income Account

The Income Account in the previous format has now been renamed as the Primary Income Account. Accordingly, the Primary Income Account includes compensation of employees and investment income. The primary income represents the returns to the factors of production owned by the residents. That is for their contribution to the production process through labour supply, or provision of financial capital and renting out fixed capital or natural resources to non-residents. However, when foreign companies reinvest their profit in the host country without taking back to home country, it will create two entries in the BOP. They will be first recorded as an outflow of the Primary Income Account and again as an inflow of foreign direct investment into the Financial Account.

## Secondary Income Account

The Secondary Income Account represents current transfers between residents and non-residents. Current transfers may be in cash or kind. Official general government transfers and particularly remittances from migrant labourers to their families or relatives are reported in this account. The Secondary Income Account in the BPM6 is same as the 'current transfers account' in the previous format.

## Capital Account

The Capital Account shows net capital transfers (difference between receivable and payable) between residents and non-residents and the net value resulting from acquisition and disposal of non-produced, nonfinancial assets between residents and non-residents. Net official capital transfers are also included in the capital account. The Capital Account is no longer coupled with the Financial Account. Instead it is coupled with the Current Account.

## Financial Account

The transactions that involve acquisition of financial assets and liabilities taking place between residents and non-residents are recorded in the Financial Account. The balance of the Financial Account should be theoretically equal to the balance of the Current and Capital Accounts. Financial Account reports through which measures the net lending to or borrowing from non-residents is financed. The transactions going into Financial Account are summarized in Table-1(b). It is noteworthy a number of revisions has been made to the Financial Account under BPM6. Given below is a summary of most significant changes among them:

1. Instead of 'debits' and 'credits' in the former system, the new format uses headings 'net acquisition of financial assets' and 'net incurrence of liabilities' enabling the Financial Account to report transactions in net terms. This means net transactions in financial assets show difference between acquisition of new assets and reduction of existing

assets instead of assets net of liabilities. Under the heading of net incurrence of liabilities it reports net value resulting from incurrence of new liabilities versus settlement of former liabilities.

2. Compared to previous one, the fundamental change in the Financial Account in the new formats is that the subcategories in the former was based on 'institutional sectors' and in some cases based on the maturity termed as 'long term' and 'short term'. The new classification is based on 'financial instruments', namely, direct investment, portfolio investment, financial derivatives, and other investment and reserve assets. However, under each instrument category, 'institutional sectors' are given as subcategories which are further divided based on maturity. For this reason most of the financial transactions previously reported under a single heading are now segregated and reported under a few different subcategories. Some of the key changes are as follows:

- In the previous format, financial flows relating to long term debt securities and project loans to the government were reported under "long term government" transactions. In the new format, long term debt securities comes under long term 'debt securities' of the 'general government' under 'portfolio investment' whereas project loans to the government are reported under long term 'loans' of the 'general government' under the 'other investment' category.
- Short term - portfolio investment in the previous format included foreign investments to companies listed in the Colombo Stock Exchange (CSE). In the new format, portfolio investment is reclassified into two subcategories as 'direct investment' and 'equity and investment fund shares'. Under this new classification, if the foreign investor owns 10% or more of the equity with voting power in the domestic enterprise, then such investment is considered as 'direct investment'. If it is less than 10%, such investments are considered as 'equity and investment fund shares' under the 'portfolio investment' category.
- Trade credits and advances obtained by the private sector previously appeared under 'Private - short term' transactions. In the new format now they are included as 'trade credits and advances' under the 'other investment' category.
- In the new format, all foreign assets and liabilities of 'deposit-taking corporations' (commercial banks, licensed specialized banks and licensed finance companies) are included under the appropriate financial instrument such as 'loans', 'debt securities', 'currency and deposits' or 'other accounts receivable/payable'. Segregating commercial bank assets

and liabilities based on the 'financial instruments' is a new development under BPM6

- 'Monetary movements' which was the balancing figure in the previous format used to be a residual category outside the Financial Account. It included transactions of 'reserve assets' and 'reserve related liabilities' of the Central Bank. In the new format 'monetary movements' directly goes into the Financial Account, in such a way that foreign financial assets managed by the Central Bank being included separately as 'reserve assets', and foreign financial liabilities of the Central Bank are recorded in the name of appropriate financial instrument in the Financial Account. For example, deposit liabilities with international organizations are reported under 'currency and deposits', while credit and loans with the IMF are reported under 'loans'.

## Overall BOP Balance after the adoption of BPM6

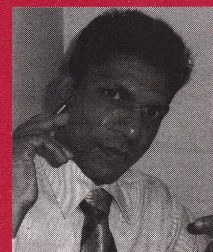
In the previous format the BOP overall balance was taken as equivalent in size and 'opposite in sign to the monetary movements. With the introduction of the BPM6 in 2013, the overall balance is no longer calculated from the BOP set of accounts. The overall BOP balance can only be calculated from the change in Net International Reserves (NIR) position of the country, which is not directly produced in the BOP.

Overall Balance = Change in NIR

NIR = Net reserve asset position at the end - Net reserve asset position at the beginning

In this calculation the net reserve asset position is defined as the difference between the reserve asset position and the reserve related liability position.

*(The author would like to acknowledge the guidance taken from Central Bank Annual Report 2013/14 in preparing this article)* ■



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## AN INTRODUCTION TO THE LAW, PRACTICE AND PROCEDURE OF INCOME TAX APPEALS

Cecil Aluthwela

A Stanford Lake Publication 2015

Reviewed by  
D.D.M. Waidyasekera

Former Commissioner of Inland Revenue, Secretary of the 1990 Presidential Taxation Commission, Past President of the Sri Lanka Institute of Taxation and Editor/Consultant of the Institute of Policy Studies of Sri Lanka

Taxation particularly income tax while it is an important aspect of fiscal policy and public finance as well as for the taxpaying public, has due to its technical and complicated nature been the subject relatively only of a limited volume of literature. This is particularly so in respect of the mechanics of income tax in Sri Lanka especially in relation to the nature and settlement of income tax appeals including appeal procedure, issues of fact and law, the role of the Assessor in the process of assessment and appeals, onus of proof, nature and scope of evidence and the appellate decision making authorities.

The Book therefore, is a timely attempt designed to meet that requirement and is authored by a former qualified and experienced tax official, a retired Deputy Commissioner of Inland Revenue. Unlike many other retired such officers who become professionals doing a lucrative tax practice after retirement, he has opted to give his knowledge and experience to the public in the form of research into the intricacies of tax law and practice in which field he has already to his credit three research publications titled "A quarter century of Income Tax in Ceylon", "A Critical Appraisal of Some Aspects of Income Tax" and "A commentary on the Tax Appeals Commission, Act 23 of 2011".

The present volume is yet another significant addition to the legal literature of the country particularly in the area of tax law jurisdiction and practice. Through primarily designed for students on the subject, it provides information useful to the practitioners, the taxpaying public and those interested in the subject. Consisting of 10 chapters and an Epilogue, the volume is introduced by no less an authority than the Chairman of the Tax Appeals Commission, Chairman Default Tax Committee and former Judge of the Supreme Court, Justice Nissanka Udulagama.

In the introduction to the volume, the author points out to double-edged nature of an income tax appeal and the unanticipated consequences that could ensue in lodging an appeal in the mere hope of obtaining some relief. He has also pointed out to the lopsided nature of the appeal provisions which are not merely out of harmony with modern appellate procedure but are weighted heavily against the taxpayer and that situation is primarily due to the absence of a vociferous taxpaying public. Consequently, tax legislation in many

instances has been enacted in total disregard to the interests of the taxpaying public. In this respect, the author cites as an example, the provisions made relating to the Tax Appeals Commission, some of which are much more obnoxious than those relating to the Board of Review which the Tax Appeals Commission superseded.

Chapter 1 deals with Preliminary Considerations. These include issues such as what is an appeal, nature of a tax appeal and the basic distinction between a Tax Appeal and an Appeal in a Civil Suit. Also considered is the concept of the Right of Appeal and what the concepts Appeal, Revision and Judicial Review mean. A number of Tax Cases are quoted in respect of all these concepts. The chapter concludes by analyzing the views expressed by the Taxation Commission of 1968 in respect of Appellate procedure where the author disagrees with its view and states that the "Views of the Taxation Commission (1968) in the matter of appellate procedure are totally untenable."

Chapter 2 deals with the Role of the Assessor and the Commissioner-General in appeal proceedings. This is an area where the views of the late Mr. Stanley Fernando, a leading tax lawyer and an eminent tax consultant has been extensively analysed particularly the operation of the rules "Audi Alteram Partem" and "Nemo Judex in Causa Sua". A number of tax cases as well as Section 123 of the Inland Revenue Act No 28 of 1979 are quoted in support of the author's views on the subject which are different from those of Mr. Fernando.

The role of the Authorized Representative at appeal hearings are dealt with in the next chapter. Here the author has attempted to provide some basic instructions as to the matters that an Authorized Representative should have regard to in appeal proceedings. Who is an Authorized Representative is explained as per the Interpretation Section of the Inland Revenue Act No 10 of 2006. Here the author points out to three aspects in this regard. An Authorized Representative has to be an individual, has to be authorized in writing by the appellant and is for a particular of assessment. He also deals with the manner in which an Authorized Representative should conduct an appeal.

The author states that in his experience while

most Authorized Representatives are capable of drawing up capital computations, cash flow statements and negotiating settlements with the Revenue officials, they are not well equipped to face the Appellate authorities. In this regard, the Reviewer himself a former Commissioner of Inland Revenue and Clerk/Secretary to the Board of Review for a number of years, would tend to agree. In the circumstances, an Authorized Representative will often accept a settlement than go up in appeal and such a settlement may not be in the best interest of the taxpayer.

Chapter 4 deals with three possible ways in which an appeal can arise. These are firstly, on issues of fact, secondly, on issues of law and thirdly, on mixed issues of fact and law. A mixed issue of fact and law is one which entails two exercises. Firstly the fact finding Tribunal has to ascertain the facts and secondly the fact finding Tribunal has to apply the relevant legal principles. The distinction between issues of fact on the one hand and issues of law and mixed issues of fact and law on the other, is important. In respect of the former, the appeal proceedings terminate at the level of the Tax Tribunal (unless of course there has been a legal error in the assessment of facts by the Tribunal). It is only in respect of issues of law and mixed issues of fact and law that the Court while assessing the facts as ascertained by the Tribunal will proceed to see whether the relevant legal principles have been correctly applied by the fact finding Tribunal.

Evidence in Tax Appeals is dealt with in the next chapter. Since the majority of Tax Appeals are on issue of fact, evidence plays a major role in Tax Appeals. Evidence can be both direct and indirect. Direct evidence would arise from oral and documentary evidence which frequently feature in appeal hearings. Indirect evidence can take the form of "circumstantial evidence".

Which has been defined as "Evidence of a fact not in issue from which can be inferred a fact in issue". Hearsay evidence and Information obtained from the Returns and accounts of other taxpayers are also included as indirect evidence.

The author points out that in Sri Lanka the Tax Appeals Commission Act No.23 of 2011 does not specify the type of evidence that should be



received and acted upon by the Commission at an appeal hearing. The only reference to evidence is that the appellant cannot lead any evidence that was led any evidence that was led before the Commissioner General except with the consent of the Tax Appeals Commission and that the Commission is empowered to admit or reject any evidence in total disregard of the provisions of the Evidence Ordinance.

On the question of evidence, the author has made an interesting point that in two very important cases (1) *Guillain V CIR* and (2) *Gamini Bus Co.Ltd V CIR*, the Inland Revenue has violated one of the rules of natural justice viz, *Audi Alteram Partem*. However, this breach had been upheld by the former Board of Review, the Supreme Court and in one of the cases, by the Privy Council itself.

Chapter 6 deals with a contentious concept—the onus of proof. The author maintains that all what it means is that the tax payer should be able to stand by his return of income. However, the onus is not always on the appellant. It is a continuously shifting one depending on the state of the evidence. There are two areas where there has been a shift of emphasis (1) artificial and fictitious transactions and (2) undistributed profits of companies. In respect of these, in the Sri Lanka Jurisdiction, the onus is on the Assessor in contrast to the UK judicial dicta where the onus is on the taxpayer or the company. There is one area where the onus is distinctly on the Revenue. i.e., the case of fraud, evasion or willful default, it then devolves on the taxpayer to establish that the ensuing assessment is either excessive or erroneous.

The manner in which an appeal should be conducted and the author's views on the proceedings before the Appellate authorities and a Tax Tribunal are dealt with in chapter 7. This is of importance because the failure to follow the proper procedure has often led to protracted delay in the settlement of appeals. There are two vital factors that determine the nature of the proceedings in an appeal. They are (i) whether the proceedings are adversarial or inquisitorial and (ii) on which party lies the onus of proof. The author deals with the proper manner in which an appeal should proceed and refers to the important fact that findings on issues of fact by a Tribunal are final and not even a Court will disturb them if there is evidence to support these findings. He also sets out the framework within which a Tax Tribunal should function and finally points out to a major constraint on the conduct of a Tax Tribunal – viz. that their conduct should confirm to rules of natural justice.

Chapter 8 deals with the Tax Appeals Commission which replaced the previous Board of Review. The issues arising from this has already been dealt with separately by the author in the commentary on the Tax Appeals Commission Act No.23 of 2011. "Here the author's main points are summarized in that (1) the law pertaining to the Tax Appeals Commission is out of harmony with modern notions regarding Tribunals (2) that the

Commission is not an adjudicating body in the strict sense of the word but is an instrument designed to arrive at the taxpayers' liability to tax (3) The law governing the commission is weighted heavily against the taxpayer, and (4) the proceedings are inquisitorial and not adversarial.

The chapter on the "Case Stated" deals with the procedure to be followed when a party is dissatisfied with the determination of the Tax Appeals Commission. The procedure is of British origin and follows the provisions of their Tax Management Act 1970. The Case Stated is not an appeal by either party to the appeal but is a Reference to Court by a Tax Tribunal on an issue of law seeking the opinion of Court. If the conduct of Tax Tribunals have been found wanting, it is in this area that they have failed most. Many a Tribunal had failed to set out properly the issue or issues of law in the Case stated. This lapse on the part of Tax Tribunals in this sphere has often invited scathing criticism by the Courts.

The final chapter 10 deals with the Role of Court in a Reference of a Case Stated. In this respect, the author makes a significant point that the Courts have a limited role to play with the Case Stated procedure. Its jurisdiction is consultative or advisory and not that of a civil court exercising original, appellate or revisional jurisdiction. However the author points out that Huxham, who originally drafted the Income Tax Ordinance has failed to appreciate this and committed two fundamental mistakes which has been repeated in all subsequent Income Tax Ordinances and Inland Revenue Acts. Hence the Courts have arrogated to themselves a function outside their jurisdiction when they venture into areas not in the case stated or when they dismissed or confirmed the assessments made. Thus in most cases the Courts have proceeded on the basis that the case stated is an appeal. This is in complete contrast to the situation in India where the High Courts, by and large, have adhered to the Case Stated procedure.

Overall the book provides vital and critical information on various significant aspects on appeals and appellate procedure. As onus of proof, scope of evidence and the appellate decision making authorities including the Tax Appeals Commission. Written in a lucid style on topics which are often highly technical and legal, the author does not hesitate to state his own views on various issues resulting from his wide knowledge and experience of tax law and procedure in his career in the Inland Revenue Department.

From a critical point of view however, there appear to be some areas where tax lawyers, practitioners and the general reader may find some difficulty and even disagree in comprehending some of the arguments adduced by the author. This is partly due to the technical nature of the issues involved and partly to the author's forthrightness in expressing without any hesitation his own views on the subject.

For example, he has disagreed with the 1968 Tax Commission's views on the appellate procedure within the Tax Department: has accused the Tax Department of violating rules of natural Justice through these were upheld by the Board of Review, the Supreme Court and even in one case by the Privy Council; has criticized the functions and procedure of the Tax Appeals commission, the proceedings which he deems are inquisitorial and weighted heavily against the taxpayer. The conduct of Tax Tribunals have been heavily criticized particularly in setting out a Stated Case and the Courts themselves have not been spared where they have been accused of arrogating to themselves functions outside their jurisdiction.

In particular, he has been very critical of the late Mr. Stanley Fernando an eminent tax lawyer and tax consultant. An Examiner in Tax Law, Council of Legal Education and visiting Lecturer in Tax Law both at the University of Colombo and the Law College and whose knowledge of tax law has been publicly acknowledged by Prof. G.L. Peiris himself. The author has however, admitted in the book that "there are many views of his, on tax appeals, to which I do not subscribe. Hence, I have a different point of view which may be of benefit and interest to those concerned with tax. "There are many issues in the book where the author has disagreed with Mr. Fernando and where he says " with all due respect to Mr. Fernando, I must say that he has got it all wrong".

It is for the discerning reader to judge as to the validity or otherwise of the relative contentions held by the author and Mr. Stanley Fernando respectively, but unfortunately, the latter died some years ago and is therefore unable to defend his views himself. In this respect, the Reviewer himself is in a embarrassing position as both contenders were colleagues of his in the Inland Revenue Department and personal friends and hence, is unable to take sides on the numerous contentious issues expressed on various topics in the book. The reader is therefore, is left to judge for himself.

Another point that may be noted is that traditionally the Table of Tax Cases are generally in most books given at the end of the book. In this book the cases which are extensively quoted are given at the end of each chapter in deviation from the traditional procedure. This, as the author maintains, facilitates easy reference and is helpful to the reader, however as a consequence the same case often tends to get repeated.

Overall the book is extremely welcome and the author is to be congratulated for producing yet another knowledgeable research work on the intricate subject of tax appeals and appellate procedure. It would be of use not only to students, on the subject of taxation but to tax lawyers, tax practitioners, taxpayers those interested in the subject and the general public alike.

A Stamford Lake Publication 2015, the book is available at all leading bookshops including Lake House Bookshop.



# WILL BRICS AND NEW DEVELOPMENT BANK BUILD A BIG CHALLENGE TO WESTERN ECONOMIES?

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## Introduction

BRICS (Brazil, Russia, India, China and South Africa) leaders of the five nations enjoyed and celebrated their unbroken collaboration and strength, as the largest and fast emerging economies in the international financial and economic system. BRICS countries actually have paid greater attention and continuously maintained profound and potential discussions to establish the New Development Bank (NDB) and the Contingency Reserve Arrangement (CRA) during the two long years of negotiations. This bank will finance infra-structure and sustainable development projects, with US\$ 50 billion in capital to get started and the bank shall have an initial authorized capital of US \$ 100 billion. The Contingent Reserve Arrangement will provide assistance to members facing financial difficulties. Further, BRICS countries have acted as a group in seeking an alternative to the existing World Bank and IMF.

More importantly, the two multilateral institutions in certain instances have been ineffective and inefficient with regard to developing nations and emerging economies. Particularly, IMF-World Bank policies have entailed negative effects on emerging economies and such economies have been provided with insufficient privileges and have been discriminated around global aspects (Pang, 2014). Today, BRICS nations have criticized the partial interventions and decisions taken, giving their own suggestions to the World Bank and the IMF respectively, on such issues as to dismantle the disparities and revive the world financial and economic system without difficulty. However, World Bank-IMF contradictory interventions, unwillingness in according to recommendations, harmful and unfavourable reflections on the poor, unfairness conditions and biases for the West, have radically shown



vulnerability and misleading the current international economic order (De Silva, 2009/10).

During the long period, World Bank and IMF as the leading institutions have increasingly played a great role since the last great depression in the context of global economic affairs. Developing nations have been given a number of concessions and financial assistance, instructions and recommendations also have been provided in a potential manner. Unfortunately, all of these attempts have failed to maintain and overcome the discriminations faced by the developing nations. During the recent four or five decades, what we call today the newly industrialized and emerging economies heavily have relied on the development orthodox provided by both the institutions. Ultimately, they have realized the serious drawbacks of these development strategies and they have adopted home grown disciplines, despite advocacy by the World Bank and the IMF respectively (De Silva, 2009/2010).

Indeed, emerging economies were fortunate because they could reflect on the outstanding performances with fast growing capabilities and were convinced of the fact that they were on the correct track. Ultimately, they were able to overcome economic difficulties and enjoyed higher achievements on a series of economic scenarios, such as, high economic

growth levels and per capita incomes, higher savings and investments, financial stability, satisfactory balance of payment, and other macro-economic fundamentals at a significant level (later discussed with figures). Therefore, they pose a serious and profound challenge and sharp competition through sustainable economic development processes and also challenging the conventional development orthodox.

World Bank and IMF with the Western European countries have largely believed and have paid greater attention to Neo-liberalized economic policy packages. However, the World Bank-IMF have given the enormous international cooperation, have endeavored to increase the contradictions and have jeopardized most developing countries with emerging economies (De Silva, 2009/2010). The existing world economic system reflects on disappointing, frustrations and serious drawbacks around the world. Less capacity and slow economic growth process in developing countries, financial and heavy economic recessions in the developed countries have emerged as immediate reaction to revive the world on healthy cooperation (De Silva, 2009/2010). The above notion is reflected by the slow Global growth in 2013, which was estimated at 3 per cent, marginally lower than the growth of 3.1 per cent recorded in 2012, although the underlying momentum appears strong. Advanced economies registered a



growth of 1.3 per cent in 2013, marginally lower than the growth of 1.4 per cent recorded in 2012. The US grew by 1.9 per cent in 2013 compared to 2.8 per cent in 2012, supported by strong contributions from consumption, investment, and inventory accumulations (Central Bank, 2014).

Under the existing circumstances, and successfully coping with the recently outstanding performances adopted by BRICS countries, it is envisaged that they would provide better capabilities to the current world economy. The aim of this study is to examine BRICS and to examine the recently introduced New Development Bank and its role in the global economy. BRICS aims at contributing significantly to the development of humanity and establishing of a more equitable and a fair world. The international public is taking a wait-and-see attitude towards the future institutional capacity and the purpose of the NDB. This cooperation has resulted in two achievements of which deep and far-reaching significance can hardly be denied or underestimated by anyone. One is that the NDB marks the beginning of efforts to build a new international financial order, and the other is a shift in international politics as a result of a sincere and skillful cooperation between BRICS countries (Pang, 2014).

### The Role of the New Development Bank

The five BRICS countries funded equally into the NDB an initial capital of \$50 billion, and the bank is scheduled to start lending in 2016. China agreed to locate headquarters in China and India is its first rotating presidency. Brazil, Russia and South Africa were given posts or units in the new bank respectively. BRICS summit decided in favour of Shanghai (China) because the city offers better infrastructure, opportunities to capture private funding and is home to more investors than the competitors. BRICS new bank demonstrated democratic values, honesty of its leaders and the institution regulations to the World. The BRICS countries are committed to contributing a total of \$ 100 billion to the CRA. China is making the biggest contribution, \$ 41 billion, followed by \$5 billion from South Africa and \$ 18 billion each from Brazil, India and Russia. More importantly, if any of the member States of the bank suffers from long-term shortages of US dollars, they will fulfill their commitments by way of cross-currency swaps, thus making less dependent on their US dollar reserves (Pang, 2014).

### Why Did Emerging Economies Decide to Form a NDB?

There were certain reasons which prompted the formation of NDB at this juncture. During the recent years, emerging economies succeeded in demonstrating their sustainable growth performances. On the other hand though, US Dollar today is used as the dominant currency, it has failed to provide sufficient advantages to emerging economies, therefore BRICS needed to introduce an alternative to the US Dollar. Recently, due to

depreciation and fluctuations of the US Dollar (the changes of the values) has resulted in a change of the inflows or outflows of foreign direct investment in emerging economies. If the US Dollar values depreciates at higher levels it will bring big losses or disadvantages to emerging economies seriously (Prabath, 2014).

Continuously, BRICS countries have demonstrated their dissatisfaction and criticism over the existing international financial system. Their main criticisms were aimed at the World Bank-IMF, because it misuses the power in the international economic system and US Dollar is used as the dominant currency unit in the world. One of the strongest criticisms of the World Bank and IMF have been the way in which it is governed. While the World Bank represents 186 countries, it is run by a small number of economically powerful countries. These countries choose the leadership and senior management of the World Bank, and so their interest dominates the bank (Bible Discovered, 2010). Emerging economies strongly suggest that the need of the equality and transparency in the financial management, but top high rank members and the board of the management officially in both institutions have failed to

The representatives of the BRICS are largely diverse, but they have maintained a good role in the global economy. Emerging economies are fast-growing economies and they are considered as the biggest five countries in the emerging world. More than 25 percent of the total world land area is located in the BRICS countries. BRICS integration represented approximately US Dollar 13.6 trillion and 25 percent of the nominal world GDP in 2011 (Veneetha, 2012). Estimated integrated foreign reserve value was US Dollar 40 billion. Intra-trade in BRICS accounts to US Dollar 230 billion and it represented 18 percent in world-trade composition, and BRICS are associated with more than 50 percent of global economic growth process (Veneetha, 2012). All these figures demonstrate their high achievements. Experts forecast that the future growth components will almost depend on BRICS countries substantially (Veneetha, 2012). The world economy is still dominated by the G-7 countries, but dominance of the global economy and financial system is transforming into the developing and emerging countries slowly.

As the figures shown in Table 1, there is a positive trend of the contributions of the emerging and developing nations.

Table 1  
World Trade Volume (Percentage of the Changes)

World Trade Volume (Goods and Service)	2011	2012	2013*	2014*
Imports	5.9	2.8	3.8	5.5
Developed Economies	4.6	1.2	2.2	4.1
Emerging and Developing Economies	8.4	6.1	6.5	7.8
Exports				
Developed Economies	5.6	2.1	2.8	4.5
Emerging and Developing economies	6.6	3.6	5.5	6.9

\*Predictions

Source: IMF-World Economic Outlook Update

expose their good governance to the world proportionately (Pang, 2014). Since the Bretton Woods Conference of 1945, the IMF and the World Bank have wielded tremendous sway over the global system, especially on issues pertaining to developing countries like BRICS. While the global market is largely a meritocracy, controlling shares of the IMF and World Bank rigidly, reflecting a balance of power that looks more like in 1945 than in 2014. China, for example, has only a 4 percent voting share in the IMF, despite accounting for more than 16 percent of global GDP and over 19 percent of world population. Other BRICS countries are similarly under-represented. The BRICS could increase their voting shares by contributing more to the two institutions, but the continued existence of sole veto power of the United States it would limit the utility of this investment (Daniel, 2015).

### BRICS Contribution to the Global Economy

The emerging economies have recorded unparalleled and huge contributions to the international economic and financial order.

### Voting and Power Shares in the Bretton Woods Institutions

Each member nation is required to contribute funds according to its economic size and strength. In proportion to their funding requirements, nations are awarded votes which result often showing a block pattern that is typical of geo-political contexts. Countries and blocks of countries that have the largest voting power are seen clearly in the Table 2. But voting power is shared as similar among BRICS members.

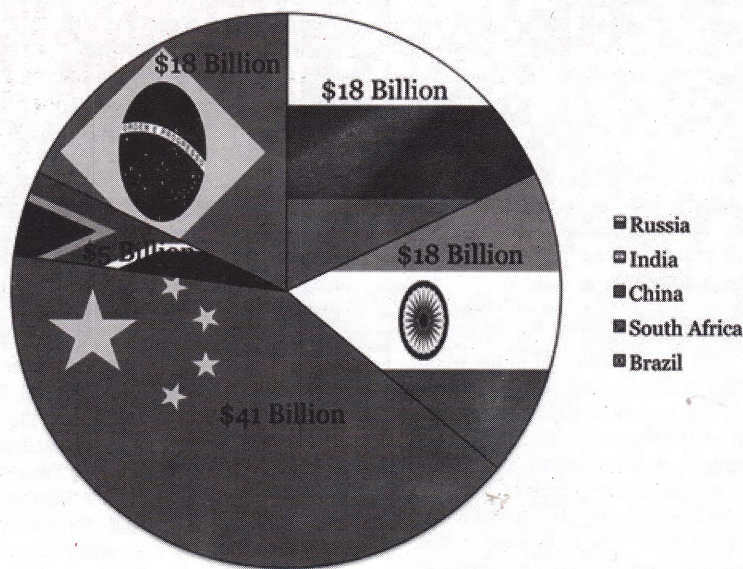
Table 2  
Voting Power

Country	Voting (%)
United States	20.6%
All of Europe	30.4%
European Union	24.5%
Asian	9.9%
Latin America	7.2%
Rest of the World	31.9%

Sources: Moore, Terbeek, Thym, 2012



## Contributions to BRICS Bank



Certainly, these voting figures expose power concentration of the Western Europe. The United States of America and other Western countries represented heavy proportions of the voting capacity which sometimes may be harmful, as they can be misused to make contradictory decisions. The Chair of Executive Presidency in the World Bank is presided by the United States and IMF Presidency is reserved to Western Communities. In the post-Bretton Woods Consensus period, it was noted that the transformations of the society which relied heavily on the fast emerging/growing market economies. But World Bank-IMF and other leading institutions are accused by the emerging economies for negligence of the potential changes to the present structure.

At the sixth BRICS summit in Fortaleza on the 18th of July 2014, they made a request to the World Bank-IMF, to implement previously approved appropriate reforms to address the present economic and financial recession. Similarly, the United Nation's Defence Council also offered some suggestions, but unfortunately, implementation of the reforms was not permitted by the U.S. Congress. However, whose duty is to solve problems hindering development, is overlaid with bureaucracy and political bias such that holding may be effective and fair? (Pang, 2014)

After the sixth BRICS summit in Brazil, they called for a media conference and expressed concerns on the present situation in the global economic system (such as economic and financial crisis, balance of payment, difficulties and political instability). The President of Brazil noted that BRICS will never challenge the World Bank-IMF and emphasized on the need to revive the global economy. BRICS noted that, while it represents 40 percent of the world population and respond significantly to global trade, they are not given sufficient privileges such as high voting capacity, and other administrative

intermediations and interventions in the decision-making process.

The BRICS group indicates the rise of a group of emerging economies. But China is still relatively bigger than the others, in terms of economic strength alone. China has the capacity to create a development bank several times larger than the NDB without difficulty. In addition, with its high credit rating, China can secure large quantities of financing in the international capital markets without the help of other BRICS countries. However, China chose to create the multi-national NDB and eventually agreed that the four other BRICS countries have the same rights as it has, though these countries are incomparable with China in terms of economic size and strength (Pang, 2014).

However, the world does not want another "World Bank-IMF", and NDB is not an alternative for World Bank-IMF. All the BRICS member countries have decided to appoint its first President from India. Indeed, this strict decision indicates common understanding with one another member country and gives a good message to world leading institutions too. They hope to extend presidentship to one another member country for a period of four years. Then, China will receive the post of President in 2035 or 2040. President of Brazil again emphasized on how they would protect democracy as a newly established financial institutions.

The Bretton Woods Conference envisaged reshaping of the International Financial system and end protectionism in the view of that the U.S and the U.K. had contributed to the drift towards the Second World War. Therefore, the World Bank - I.M.F became the pillars of the Bretton Woods system. Then, they could have provided with the better role to the world economic system. In fact, they intervened on serious issues and persuaded to reconcile the world system in an impartial

way (Pang, 2014). The World Bank-IMF does not consider the existing agreement such as bi-lateral or multi-lateral, when imposing restrictions and barriers. Therefore, the commitment of the fast emerging economies leads to obtaining of a better solution for economic and financial difficulties and good rise at powerful voice to the world for the need of alternatives.

The launching of the NDB is of deep and far-reaching significance, because it is about far more than just the birth of a multilateral financial institution. The BRICS group which created the bank is in itself both an economic group and an international political force. Economically, the NDB has turned alternatives to the IMF and the World Bank from a possibility to a reality. Politically, the NDB demonstrates that an emerging big power exercised self-restraint in securing power to make countries with different levels of strength cooperate with each other in an equal footing (Pang, 2014)

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# VALORIZATION OF MUNICIPAL SOLID WASTE IN SRI LANKA

## Abstract

Over 7300 tonnes/day of wastes are discarded as worthless. The technological advances, principles and concepts can be used to convert wastes to useful products to reduce inflation, particularly extracting energy from combustibles. Foremost, rehabilitation and extraction of wastes from dumpsites will reduce pollution loads, while providing energy for power generations. Old incineration systems are inefficient requiring stringent cleaning of exhaust gases sent through chimney stacks. Instead, gasification systems with syn gas productions or even better syn gas from hydro-pyrolysis/pyrolysis can drive combined cycle systems. In combination with 'Landfill bioreactors' wastes will have a value of Rs. 24,000/- per tonne of raw wastes.

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## 1.0 Introduction

Solid wastes are neither waste water discharges or atmospheric emissions discarded by individuals and communities as "worthless". In Sri Lanka, the solid waste generation was more than 7,300 tonnes/day in 2012 (Basnayake & Vishvanathan 2014) with about 10-20% being reused and recycled. Ultimate aim of any country is to reduce the quantity of wastes ending up in landfills. The landfills are final disposal sites. The categorization depends on the degree of design and engineering in the construction of landfills. They could be engineered or semi-engineered or sanitary landfills and more recent technology of Landfill Bio-Reactors (LBRs). The term dumpsites are used when wastes are disposed on open air lands and exposed wastes piles.

The closing of dumpsites and implementation of Integrated Solid Waste Management (ISWM) systems rely on many concepts and principles developed and endorsed by international and local bodies, government policies and strategies to create sustainable waste management. In Rio,

word 'sustainability' emerged as a means to ensure environmental compliance of selected technologies with ethical practices, safeguarding all of the stakeholders and conservation of resources for future generations. Therefore, based on acceptable norms, principles, regulatory measures, inventions & innovations and experience gained, the authors present their views on valorization of Municipal Solid Waste (MSW) in Sri Lanka.

## 2.0 Rehabilitation of Dumpsites

In the advent of finding improved methods of waste disposal in many temperate developed countries, arresting large scale pollution from dumpsites was foremost. They recognized the severity of short and long term impacts and effects on human health and destruction of ecosystems. Dumpsites are lethal under tropical conditions polluting water, air and soil. Therefore, it is imperative to characterize the dumpsites in terms of ecological zones, terrain, geology and geomorphology. The waste composition, including moisture







and energy contents of raw and old wastes allows predicting and designing systems to rehabilitate them. These components influence on the strength of the pollutants emitting from dumpsites. The liquids termed as “leachate” is formed from the moisture in wastes and rainwater flowing through it and water formed during decomposition process. Organic acids are formed in this process that dissolves and mobilizes inorganic compounds in biodegradable and non-biodegradable substances. Furthermore, microbial populations are different to ambient conditions and support high concentrations of pathogens. Leachate is then highly toxic with organo-metallic compounds. The Hydrologic Evaluation of Landfill Performance (HELP) model (Schroeder et al., 1994) can be used to estimate the amount of leachate generated in dumpsites and landfills.

Out of the many dumpsites, well known ones are Kollonnawa, Bloemendhal, Karadiyana in the Western Province and Gohagoda in Kandy. Sometimes soil cover is used to reduce odor in these dumps. The movement of leachate contaminating the ground and surface water is

the major concern, since pollution will continue for well over 30 years after closure of dump. Bloemendhal is an example of such pollution even after closure. The Karadiyana site is similar to Bloemendhal in characteristics, since they are both low lying marshes and filled with identical compositions of wastes from Colombo District. The lateral seepage is very high and requires vertical barriers, preferably with biofiltration liner systems.

Only few dumpsites are being rehabilitated due to lacking of funds and political will. Gohagoda is one nearing rehabilitation works with the efforts of the Company Ecotech Lanka Ltd., Kandy Municipal Council and Solid Waste Management Research Unit (SWMRU) of the University of Peradeniya (UoP). The groundwater contamination is less than in low lying dumps in the Western Province, therefore able to convey the leachate for treatment with interceptor drains that will surround the entire dumpsite. Once completed, on average of 75 m<sup>3</sup>/day of leachate will be treated in natural system of leachate treatment bioreactors, followed by analgae pond, a floating wetland and subsurface constructed wetlands.

In the case of air pollution, the Intergovernmental Panel on Climate Change (IPCC) model (Kamalan et al., 2011) is used to predict the methane generations and carbon dioxide from dumpsites and landfills. Other landfill gases (LFG) are volatile compounds, hydrogen sulfide and nitrogenous gases. Just visualize the methane emissions of 8 to 10 tonnes/day from decomposing wastes over 30 years of Gohagoda itself, let alone from other dumpsites. If captured can produce 1 to 1.2 MW of electricity. The total rehabilitation costs are estimated at Rs. 300 million. It also includes relocation of dumpsite tenants.

Once these emissions are controlled, the dumpsites can be valuable assets (Senervirathne et al., 2013; Chiemchaisri et al., 2010). In fact, the Resource Utility Value (RUV) of the processed solid fuel is estimated to be double the cost of rehabilitation and adequate information is available for rehabilitating the dump (Senervirathne et al., 2013). The High Heating Value (HHV) of the resource is 17MJ/kg in comparison to coal of 20MJ/kg. The economic benefits are immense, saving the country billions of rupees by arresting toxic leachate flow ending up in far distant places even in the North Central Province conveyed by the Mahaweli irrigation waters. Unfortunately, SWMRU did not have adequate funds to continue the project at Thirupperumthurai in Batticaloa, but the liner system has arrested contamination of wells surrounding the dump. This liner system received the Presidential Award for the best invention for the year 2011 (Patent No: 15676). It is indeed unique and functions well in all of the systems, including capping of dumpsites and landfills.

### 3.0 Principles and Concepts for Managing Wastes

Reduce, Reuse and Recycle (3R) concept is widely used to manage wastes in more recent times with Life Cycle Assessment(LCA) and perspectives to make it an effective means to move towards yet another important concept of resource circular economies, leading to the principle of sustainable development.

Promoting and enforcing 3R concepts can divert wastes from landfills. Both the producer and consumer must consider reducing and minimizing packaging, avoiding compulsive consumerism with much improved attitudes towards conserving abiotic resources and most importantly minimizing the use of hazardous materials. Even in households, the amount of excessive medicine, e-wastes, paints, vehicle wastes etc. should be curtailed and managed to ensure separation of waste





streams. Contamination of these materials in the sorted wastes is the major obstacles for reuse and recycling of wastes.

The prudent use of plastics, which are recyclable, is beneficial, since there are limitations of biotic resources. Plastics play an important and effective role in managing biodegradable materials. Today, the PET bottle saves energy and less atmospheric pollution of transporting heavy glass bottles and recyclable to produce the primary product the "PET bottle" or secondary products like in textile.

In any reuse or recycling option, lifecycle costs (LCC) should be determined, which entails capital cost + operation and maintenance costs + environmental costs (Menikpura et al., 2012). The latter depends on deducing "willingness to pay". Another or a supportive means is to apply Commodity Price Energy Equivalent (CPEE) in diverting wastes from landfills (Basnayake et al., 2013). It derives indices based on one unit of energy contents in terms of currency for the production (Ep), services, including

transport (Es) and waste discarded (Er). This allows calculating proportionate costs of the commodity for each of these components, giving directly the environmental costs in discarding the wastes.

The example of A4 paper production (Basnayake et al., 2013) clearly show a lower index, Ep when recycling is taking place. However, index Er, which is the discarded value remain the same for either cases of virgin or recycle A4 paper, since the consumer rejects after making use of it. The producer then enjoys the benefit of recycling because Es will increase as long as transport costs remain the same. In reality the transport costs increase due to higher costs every year of extracting fossil fuels from deposits deeper down in the earth, sometimes penetrating the earth crust (Todd et al., 2015). This is evidently inflation. Even if the rate of inflation remains static year after year, it is an exponential function of  $t$  (Crauder et al., 2012), see Figure 1. The authors point out that the rate of inflation as shown in Figure 2 for diesel prices were higher than A4 paper,

attributing to large scale recycling of paper.

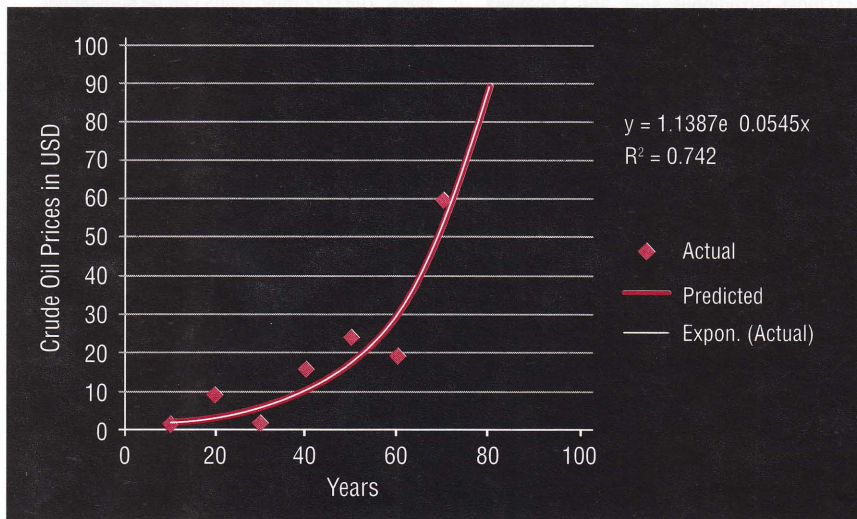
Plastics being a petroleum product do not fall into the same category as paper. Notably, fuel prices are somewhat lowered when markets are stable or increases in complimentary petroleum products. In a lifecycle perspective, limits are drawn clearly in recycling the quantum of plastics in the world. In cases of excess paper and plastics, extracting the energy is the best option. At least some component of the energy extracted in expending to produce such products can combat inflation, like direct recycling of those products. Needless to mention that biodegradable plastics should not be encouraged, since energy is expended in producing it and CO<sub>2</sub> lost to the environment without making full use of its lifecycle.

Extended producer responsibility ensures buying back of used items to reuse or recycle them in environmentally friendly processes for primary or secondary replacement of raw materials. The consumer pays for the products including environmental costs in this instance. On the other hand, when 3R concept is not applied, it compels government or private sector agencies to treat effluents in costly end-of-pipe line systems. In all cases "polluter pay" principle must apply as endorsed in the Rio Summit in 1992. Precautionary Principle is equally important as a fundamental but a complex application.

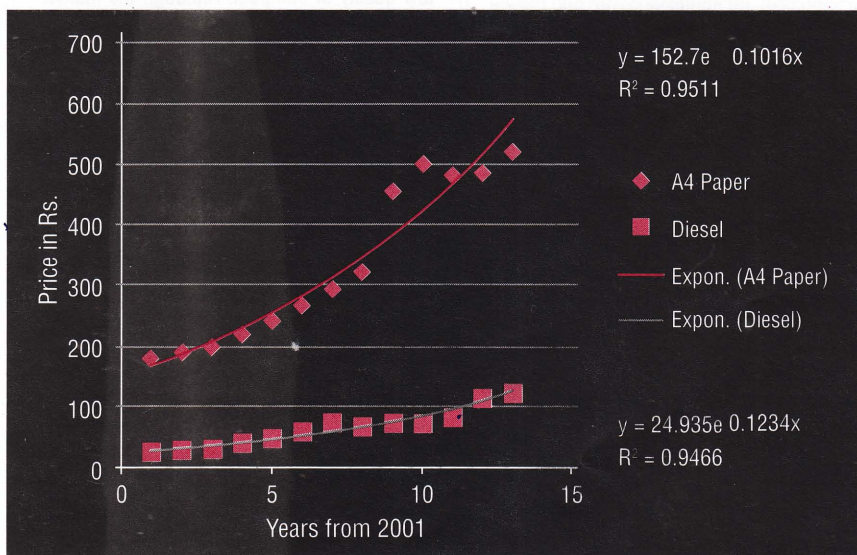
#### 4.0 Selection of Technologies

In the selection of technologies it is important to apply this principle along with transfer of technologies from developed to developing countries. The biodegradable wastes are the most difficult to manage. The easiest and least cost is to convert these biodegradables to compost and there are many methods, namely; simple small home composting methods to large scale piles that can be static systems or turned manually or mechanically. Food wastes as feedstock for an aerobic digestion is advantageous since biogas is one of the useful end products.

In an ISWM system, such combustible materials that cannot be recycled can be thermally converted to useful energy and power. Raw wastes incineration systems were the first to emerge to reduce the waste loads ending up in landfills. Energy was not utilized in those early mass burning systems. The next generation ones, in temperate countries were commissioned to generate electricity and space heating. All of those systems are inefficient due to high moisture in the wastes and not at all suitable for wastes like in Sri Lanka. The residual ash forms slag and contains high levels of heavy metals and chlorine compounds. In order to overcome the shortcomings of those systems, the wastes from dumpsites and landfills are processed and they are termed 'Residual Derived Fuel' (RDF) or 'Refuse Derived Fuel' in the case of raw wastes undergone drying, collectively now called 'Solid Processed Fuel' (SPF). They are sorted and selected for high calorific value feedstock for high temperature combustion, thus increasing the thermal conversions in

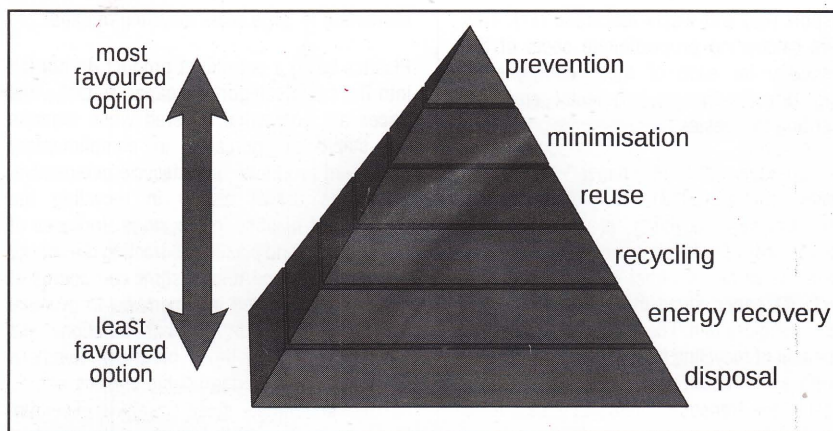


**Figure 1.** Ten year average actual and predicted crude oil prices since 1951, illustrating exponential function and derived inflation of 5.6% from  $(1+i)^t = e^{kt}$  (Adopted from British Petroleum, 2014)



**Figure 2.** Actual and predicted prices, illustrating exponential functions and inflation of 10.7% and 13.1%, respectively for A4 sheet paper and diesel derived from  $(1+i)^t = e^{kt}$  (Adopted from British Petroleum, 2014)





steam boiler systems for driving efficiently steam turbines to generate electricity. High temperature combustion systems reduces dioxin and furan formations and require less attention of these substances in flue gas cleaning systems before emitting to the atmosphere. Instead, particulate fly ash content and NO<sub>x</sub> levels increases. These emissions are now curtailed in good practices in developed countries. Nevertheless, it is at high costs and stack emissions of particulate matter (PM) less than 2.5 and nano particles are health and environmental concerns, particularly so in waste conversions to complex gaseous products at very high temperatures in plasma technology systems. Gasification systems reduces particulates, particularly so when the syn gas or producer gas of the CO, H<sub>2</sub>, CH<sub>4</sub>, CO<sub>2</sub> with over 50% N<sub>2</sub> is cooled, filtered and cleaned to supply fuel gas for internal combustion (IC) engines. It is classified as a poor gas because of high nitrogen. A richer gas consisting of CH<sub>4</sub>, H<sub>2</sub>, CO and hardly any N<sub>2</sub> is produced in pyrolysis/hydrolysis systems. These gasses can fuel not only IC engines but also gas turbines and the exhaust gases can be coupled with the heat recovery steam generation systems of pyrolysis / hydrolysis for steam boiler turbine system in a combine cycle. The thermal conversion efficiency can reach 40-45%.

In this thermal system, diesel and other products like pipe gas can be alternate products to electricity generation. It produces char, better than primitive pyrolysis methods that can be activated with biocatalyst and used in active phase composting to produce organic fertilizer enriched with both nitrogen and organic phosphate derived from most ferruginous soils and Eppawela rock phosphate (Gunasekara 2014), thus eliminating the problem of ash disposals.

Combining both landfills and extraction of energy is the best option for variable MSW loads encountered in the generation of wastes. Therefore, 'Test Cells' of landfill bioreactors (LBR) were researched by the SWMRU at Peradeniya and under dry conditions at Samanthurai with the assistance of South Eastern University of Sri Lanka (Thivyatharsan et al., 2012) and UNOPS. It was found that gas generations are rapid and diminishes within three years of construction. It is the best so far recorded of LBRs and it can be attributed to the liner and cover system developed by the University of Peradeniya. A LBR is under construction in Gohagoda, Kandy. The gas generations after cleaning will be used as a dual fuel with gasification/pyrolysis syn gas system to drive IC engines or gas turbines.

The LBR costs less than 1/6 of sanitary landfills. The High Density Polyethylene (HDPE) liner and cover systems of sanitary landfills are expensive, requiring 10 times more clay. The LBR can be used over and over again, because LBRs can be mined once gas generation are low to excavate and produce SPF. Such landfills are termed 'sustainable landfills'.

Some types of slag and ash from combustion systems need landfilling, preferably in secure landfills meant for hazardous industrial wastes. Still large number of scientists, engineers and government officials prefers sanitary landfilling of raw wastes. May be they think it is the easiest, gives an assured result in addition to capital intensive constructions without having to justify excessive costs. If a comparison is made between landfilling and waste to energy, the capital and operational costs per unit of wastes are virtually similar, but the total operating profit in converting the wastes to electricity is Rs 24,000/tonne of raw wastes, estimated over a period of next ten years. The economic gains can be substantial and transfer of technologies and know-how in particular the latest waste to energy (WTE) should be considered in developing sustainable systems. There should be mutual benefits for the technology providers and the country, when transfer of such technology takes place, particularly in-country 'inventions and innovations'.

### 5.0 Investments for Sustainable MSW Management

In so far as sustainability of MSW management is concerned, there have been progresses made towards improvement of the environment. One could feature the application of precautionary principle in the projects developed by the national "Pilisaru" program. The aim is to encourage low cost technology of composting and sanitary landfilling as means of managing the wastes. The degree of success was masked with the low quality of compost. Although the market for compost was poor, it can be viewed as landfill pre-treatment method to reduce the pollution loads and volume and quantity of wastes ending in landfills. Landfills being the core of ISWM systems, five landfills will be constructed under the "Pilisaru".

The applications of improved technologies and proper investments have been curtailed by promoters of old machinery and equipment from abroad or inefficient thermal conversion systems or promoters of plasma technology. Some of the so called investors and promoters are opportunist to make a quick buck and get away from the responsibilities.

On the contrary, the financial institutions have helped immensely in directing and developing the Kandy project. The banks too have matured to realize the potential of WTE projects, since the internal rate of return (IRR) is above 15% even with undertaking rehabilitation of dumpsites. Unlike water for hydropower, waste arrivals can be predicted



Pilisaru recycling project launch



and controlled by the local authorities. Equity IRR of 20% is more than enough to back a WTE project than investing in a casino.

## 6.0 Conclusions

The past burden of worthless wastes, creating ugly mountains can be made economically feasible with the applications of proven technologies while controlling the emissions that are causing severe health problems for the populations and destruction of the fragile ecosystems. The economic benefits will drive the financial instruments to encompass affordable and latest technologies of reusing and recycling wastes, especially WTE. It will result in lowering inflation and move towards sustainable waste management systems and encourage moving towards a resource circular economy. Everyone and each organization has a role to play in reducing wastes in keeping with the 3R concept.

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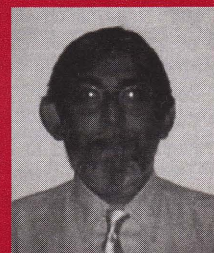
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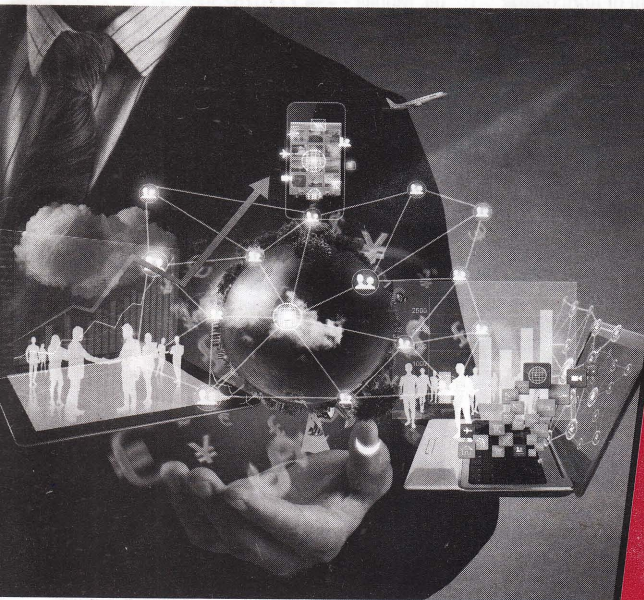


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# ICT & DEVELOPMENT IN SRI LANKA

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### Overview

More information and devices are coming online daily and the world is getting more connected everyday. Sri Lanka has been proactive in taking measures to benefit from the ICT revolution. Formal measures were initially taken to develop computing in Sri Lanka in 1982 with the drafting of the National Computer Policy, institutional framework and Action Plan, enacting the computer and Information Technology Act No. 10 of 1984 and consequently the setting up of the Computer and Information Technology Council of Sri Lanka (CINTEC) in 1984 as the apex National body on IT. The name was later changed to Council for Information Technology, but the acronym, CINTEC was retained. CINTEC played the

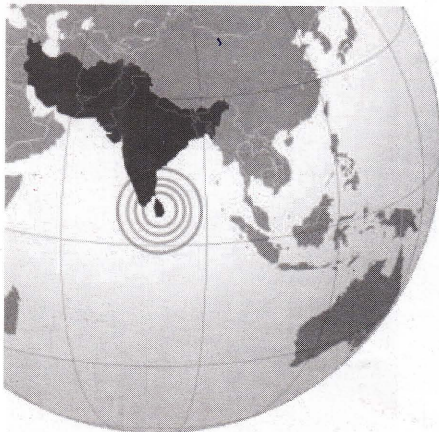
lead role in formulating national policies and proposals for legislation on IT related areas' developing and adopting standards, in implementing projects and programs on ICT, carrying out awareness programs, initiating the establishment of the IT Associations etc. Subsequently, with the closure of CINTEC, the Information and Communication Technology Agency (ICTA) of Sri Lanka was established under the Information and Communication Technology Act, No. 27 of 2003 as the legal successor to CINTEC.

Significant progress has been made under the e-Sri Lanka Development Project which ICTA implemented; with regard to Sri Lanka's performance in the UN e-Gov Index, Sri Lanka climbed 41 places, from the 115th position in 2012, to the 74th position out of 192 countries in 2014. This is a percentile ranking of 38.5% and Sri Lanka is in the top 40% of countries in the world engaged in implementing an e-Government agenda. The overall ICT development status of Sri Lanka, which in 2005 was ranked 83rd out of 115 countries in the Networked Readiness Index (NRI) published in the Global Information Technology Report (GITR) of the World Economic Forum and graduate business school INSEAD, improved to 65 out of 143 countries in 2015. The ICT literacy rate, which was less than 9% in 2004, had surpassed 35%<sup>2</sup> by 2013.

Sri Lanka's IT/ITES (IT/IT Enabled Services) industry is emerging rapidly as a priority industry, becoming the 6th largest export

revenue earner, and with rapid domestic expansion. Sri Lanka has been featured in related global rankings and has the potential to achieve USD 1bn in export revenue and provide direct employment to 100,000 in the next five years. Export revenue for the country from IT and BPM (Business Process Management) in 2014 was estimated to be USD 800 million. The main markets for the Sri Lankan export industry are North America, Europe, Australia, the Middle East and Asia. Several leading global outsourcing companies have already set up operations in the country. ICTA, the Export Development Board and the Board of Investment is actively engaged in promoting the industry to key decision makers in foreign markets with direct business promotions for the local ICT companies. IT/ITES (IT Enabled Services) companies in Sri Lanka have won many international awards, and have many achievements of international repute which have also helped make a mark in the international market of the industry's capabilities.

Sri Lanka is also gaining momentum as the destination of choice in the global IT and BPM market. The country was among the top 20 in the A.T. Kearney's Global Services Location Index (GSLI) 2014<sup>3</sup>. Colombo was rated as the 5th most attractive destination globally for Finance and Accounting by Tholons. The country has created niche centers of excellence for Finance and Accounting services and for Banking and Insurance services in the global BPM market. The niche focus for IT in the country is on the areas







of mobile, telecommunication, travel and leisure. The IT industry employed just over 15,500 in 2003 and has developed rapidly to employing over 90,000 professionals by 2013 (75,000+ IT professionals, and 16,000+ ITES professionals). Whilst the IT industry mainly requires specific higher education qualifications on IT and its related subjects the ITES industry employs professionals specialized in many other disciplines such as Accounting and Finance, Law etc. as well as GCE Advanced Level and Ordinary Level qualified individuals with English and IT knowledge due to the wide spectrum of services offered. Hence, the employment potential in this industry is immense.

Through the Lanka Government Network, 550 central and provincial Government organizations are connected providing citizen services through secure electronic communications. The Lanka Gate infrastructure comprising the country portal ([www.srilanka.lk](http://www.srilanka.lk)), Internet and mobile payment gateway and SMS gateway provide an enabling infrastructure for rapid deployment and integration of electronic services. As part of the Lanka Gate initiative ICTA has developed many electronic services (e-Services) offered through the Internet, SMS and mobile applications. The first transactional e-Service, the Revenue Licence initiated the path for acceptance of electronic payments for Government services.

### Government strategies for promoting ICT-based growth

ICTA's strategy was to provide affordable access and opportunities by improving ICT infrastructure; improve the secure delivery of public services and governance using ICT; enhance the quality of education, learning and research through use of ICT; build a strong ICT industry; proliferate access to ICT and use of ICT applications in rural areas for rural socio-economic development; and create the institutional leadership to carry forward e-Development in Sri Lanka.

#### a) Supporting the industry to use and adapt to ICT

ICTA has been extensively engaged in building capacity within the industry through its ICT Capacity Building Program (ICBP). Through ICBP, the Industry's Human Resources are developed by assisting the training of professionals on industry priority areas, in providing postgraduate education and overseas exposure to senior managers, by introducing to the country the latest technologies and best practices available overseas, in training trainers, by providing new recruits the initial training required for employment in the ITES Industry and in training individuals who wish to enter the industry.

ICBP also pushes the industry to adhere to international standards on processes and quality by funding the acquiring of the required certifications. ICBP also recognizes innovation in the Industry and has assisted many such projects and is engaged in nurturing entrepreneurship for individuals with novel ideas. Country business promotion activities are also carried out at International ICT events to build awareness of the Industry's capabilities. Regions covered include Europe, Australia, the Middle East, Asia and Africa.

Broadband connectivity is already



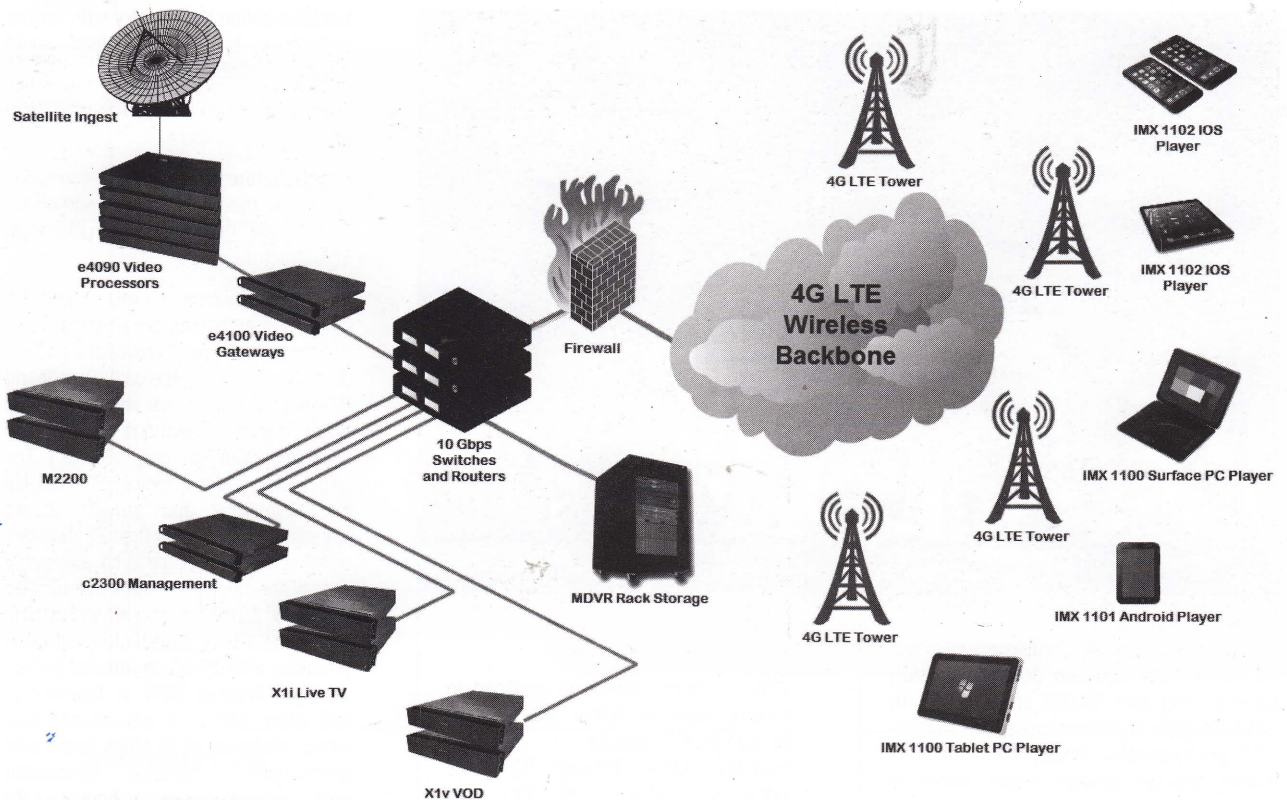
#### b) Infrastructure development and promoting broadband

The basic foundation for an information society is the availability of ubiquitous information and communication infrastructure.

**Broadband access:** In this regard Sri Lanka has embarked on an initiative to accelerate high speed broadband (HSBB) development. The National Broadband Initiative (NBI) is an initiative under the Telecommunications Regulatory Commission of Sri Lanka (TRCSL). The target is to make broadband affordable and ubiquitous and provide access speeds equal or greater than 25 Megabits per second (Mbps) so that citizens could access the Internet irrespective of their locality by 2019. The goal for end 2019 is to provide 20% of households and other premises with 25 Mbps Internet access on fiber. Another 30% of households and other premises will be provided with a minimum of 10 Mbps broadband connections (Invariable bandwidth) using an alternative technology. Sri Lanka has achieved its preliminary goals in broadband development. Prior to taking broadband to rural areas, the quality has been improved and charges reduced to affordable rates. This permits widespread access to high quality, high speed broadband services. To ensure access to all, especially in remote areas where other means of Internet access is not possible the introduction of a low cost satellite service is also being planned. At present Sri Lanka has advanced broadband technologies from 4G LTE<sup>4</sup> to "Fiber to the Home". To widen the international backbone capacity another submarine landing station to be commissioned in 2015 will provide competitive rates in international data services for retail service providers; this new submarine cable (Bay of Bengal) will place Sri Lanka in a better position in terms of redundancy, or back up.

**Free Wi-Fi:** Through the free Wi-Fi project which ICTA implements; citizens will be able to access 100 MB of data monthly at a maximum speed of 512Kbps. The locations are common public places such as railway stations, bus stands, Public Libraries, hospitals, Universities, parks, shopping malls, archaeological sites, museums, tourist attractions and Nenasala centers etc. The free Wi-Fi service has been rolled-out by local telecommunication





operators; Sri Lanka Telecom PLC, Mobitel (Pvt) Ltd, Dialog Axiata PLC, Lanka Bell (Pvt) Ltd and Lankacom, and supported by Etisalat Lanka (Pvt) Ltd, Hutchison Telecommunications Lanka (Pvt) Ltd, BhartiAirtel Lanka and Lanka Communications (Pvt) Ltd. The Government Call Center (GIC), 1919, handles inquiries on the free WI-FI services and assists in logging into the system. A webpage [www.freewifi.lk](http://www.freewifi.lk) has also been developed. Public feedback and comments are received through social media and the twitter #tag, #freewifilk.

**Access centers:** ICTA has established common access points (termed Nenasala centers or Wisdom centers) throughout Sri Lanka. These multi service centers addressed a lacuna as affordable access is provided through different means, to communication, to the Internet, and thereby to information, relevant content, services and knowledge. Centers were set up in places commonly accessible to all communities.

**c) Ensuring human resources development and adaptation**

**Building capacity, to enable the necessary skills for benefiting fully from the information society**

Sri Lanka has addressed the need for building capacity of Government officers. Over 15,000 Government officers have been trained in basic ICT skills, ICT technical skills and in leadership. ICTA has also gone beyond the provision of access and has focused on how Nenasala users use ICT since developing human

capacities impact national development. Nenasala operators were given in-depth training on managing the centers successfully. Training on local language computing has been provided to Nenasala operators, since most people in Sri Lanka are not conversant in English. One of the primary services Nenasala centers offer to users is training. Training is customized to citizens of varying capabilities and to the needs of specific communities.

Sri Lankan schoolchildren, even in rural areas are given the stepping stones towards achieving skills for jobs which may not be at present in existence; IT is available in the GCE A' Level curriculum. The Ministry of Education and TRCSL with the support of Internet service providers recently launched the venture SchoolNet II to connect school computer labs with high speed Internet services. The SchoolNet II will connect 4000 schools (Stage 1) with high speed Internet services ranging from 40Mbps to 100Mbps. This will replace the existing 128kbps connections. With the support of Internet service providers the Ministry of Education has completed the Pilot Project of SchoolNet II by connecting more than 50 schools with high speed Internet services.

**d) Encouraging the development of local content and applications**

Putting in place technical conditions to facilitate multilingualism on the Internet and development of local language content – to ensure linguistic and cultural diversity and identity

**Enabling ICT in local languages:**

ICTA with stakeholders, such as the Sri Lanka Standards Institution assessed all projects and programs that needed to be implemented to ensure that ICT can be used in Sri Lanka's two local languages in the same way that English is used, i.e. the use of ICT in Unicode<sup>®</sup> Sinhala and Tamil has been enabled; local language scripts are displayed correctly in all computers with key operating systems, Unicode local language fonts are available and keyboard input is possible, sorting is standardized, etc. Internet web addresses in Sinhala and Tamil equivalent to .LK are being registered by the .LK Domain Registry. Thus localization has been satisfactorily carried out and Sri Lanka's computing environment has been adapted to suit local linguistic needs.

**Content:** Much effort was directed at building local language content and services of relevance to rural communities. Some of these projects are as follows: The tri-lingual information repository, Improving Reproductive Health Information Access through ICT, [www.happyliife.lk](http://www.happyliife.lk) was satisfactorily implemented in Sri Lanka and has even been replicated in Afghanistan. Another such successful project is ImpairedAid converts Sinhala text to Braille, and vice versa. National Best Content Awards – the e-Swabhimani event – has been held for several years. e-Swabhimani is an ICTA initiative aimed at recognizing excellence in developing digital content. Government websites are in three languages, and a plethora of local language content, websites and blogs





have been developed since the use of ICT in local languages was enabled.

#### e) Promoting cyber security

ICTA has been addressing the issue of formulating and incorporating into the country's legal system, the suitable measures relating to ICT for creating an enabling legal environment. Sri Lanka has addressed the issue of cyber crime; the Computer Crimes Act No. 24 of 2007 of Sri Lanka provides for the identification of computer crimes and provides the procedure for the investigation and enforcement of such crimes. The e-Transactions Act No. 19 of 2006 of Sri Lanka facilitates domestic and international electronic commerce by eliminating legal barriers and establishing legal certainty; encourages the use of reliable forms of electronic commerce; and promotes public confidence in the authenticity, integrity and reliability of data messages and electronic communications.

For strengthening the trust and security framework of the country and to protect the information infrastructure of the country, ICTA established Sri Lanka Computer Emergency Readiness Team Coordination Center (SLCERT|CC) in 2006.

Sri Lanka CERT|CC is mandated with protecting the Information and Information Systems in Sri Lanka. Its services range from responding to and investigating information security breaches, analyzing malware in standard environments, preventing security breaches by way of awareness creation, security assessments and building security capability. It is a member and the national point of contact, for both the Asia Pacific Computer Emergency Response Team (APCERT) and the Forum of Incident Response Security Teams (FIRST), the regional and

global associations respectively, which coordinate security efforts between nations. Sri Lanka CERT resolves incidents which are reported, reviews networks, and carries out awareness programs. The Cyber Security Week program is held each year to create awareness on information security; the annual Cyber Security Week program and the Annual National Conference on Cyber Security was conducted for the 7th consecutive year in October 2014. Social networks have become extremely popular especially among youth, and these have the ability to trigger events which were not possible earlier. Awareness programs implemented by Sri Lanka CERT address the negative impacts that can occur with these developments and educate youth. Under the Global Action on Cyber crime (GLACY) project, ICTA together with Sri Lanka CERT conducted an international conference on the theme "Assessing the threat of Cyber crime" in March this year.

Sri Lanka CERT also established a Computer Security Incident Response Team (BankCSIRT) for the Banking Sector under the CERT umbrella scheme, and the National Certification Authority that will facilitate secure electronic transactions is also being established. ICTA organized the UNCITRAL (United Nations Commission on International Trade Law) South Asia Conference to promote the ratification process of the Electronic Communications Convention and for offering experts an opportunity to illustrate and compare their experiences. Sri Lanka was recently invited by the Council of Europe to accede to the Budapest Convention on Cyber Crime.

Contribution of traditional sectors to the GDP is declining while that of ICT sector is growing steadily.

## Acknowledgements

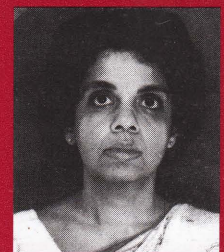
1. Ms. Chitrangie Mubarak, Chairperson, Information and Communication Technology Agency of Sri Lanka (ICTA)
2. Dr. Lalith Gamage, Sri Lanka Institute of Information Technology (SLIIT)
3. Mr. Lal Dias, CEO, Sri Lanka Computer Emergency Readiness Team | Coordination Center
4. Mr. Harris Rajapakse

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- [www.itu.int](http://www.itu.int)

## Footnotes

1. Evidence (Special Provisions) Act no. 14 of 1995
2. Source: Country partnership Assistance Strategy Report, World Bank, March 2014
3. GSLI: A tool to help companies understand & compare factors that make countries attractive as potential locations for offshore services, based on their financial attractiveness, people skills & availability, & business environment.
4. LTE: Long Term Evolution, a wireless communications standard.
5. Unicode: Universal Encoding, the character encoding standard with worldwide acceptance. ■



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# POVERTY - AGRICULTURE NEXUS OF SRI LANKA AND SOME SUGGESTIONS TO TRANSFORM THE AGRICULTURE SECTOR

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### 1. Introduction

At the end of 2015, world will take stock of, how it has succeeded in meeting the Millennium Development Goals. Over all Sri Lanka can be proud, that it has achieved almost all the goals to a great extent (MDG Country Report 2014). However, this report highlights that while national performance is strong, significant regional disparities exist, calling for special attention to geographically-isolated and deprived regions. Disparities are most extreme in areas such as poverty levels, child nutrition status, and maternal mortality rates. Hence, this article will focus on the issue of poverty deeply, where it occurs, its dimensions and to analyze ways and means of making poverty alleviation and development programmes more effective towards this issue.

Poverty in general discussions is identified as a phenomenon of low incomes. However, as per the human development perspective, it is a much broader concept and involves several perspectives. Human development itself is defined as the process of enlarging people's choices (UNDP, HDR 1990). In that context, poverty is a situation where opportunities and choices mostly basic for human development is deprived to lead a fruitful life. Taking this "derivational perspective", one can identify several perspectives in regard to poverty: Income perspective, basic needs perspective, and capability perspective (UNDP, HDR 1997). Hence, poverty is an outcome of deprivation of all these aspects, and not income along.



## 2. Measurement of Poverty: Multi-dimensional Nature

There are several measures used to measure poverty, and Human poverty Index (HPI), was introduced by UNDP (1997), which takes into consideration, parameters such as, vulnerability to death at a younger age (of 40 years) or life expectancy (Health dimension), literacy rate (education dimension), and availability of a decent level of living (income dimension). In addition UNDP in 2010, (HDR, 2010) introduced another concept called, Multidimensional Poverty Index (MPI). It had 3 dimensions and 10 indicators. Again the major dimensions were health, education and living standards as a proxy for incomes. Hence, all these different measures consider the multi-dimensional nature of poverty. However, due to the complicated nature of estimation of HPI as well its measurement of an "average" figure, in many situations what is available is the Poverty Head Count Ratio, which is number of persons living under an established poverty line. This measure has the advantage that it can associate the incidence of poverty with a specific group of people. Though there are many facets to poverty, due to the overwhelming effect of income, this indicator is mostly used. However, in analyzing poverty the other factors, such as education and health aspect too need to be considered.

### 2.1.1. Poverty in Sri Lanka

Sri Lanka in general has an impressive trend of reducing poverty over time. The definition used is the number of people who are receiving less than a specified income, which is around Rs, 3,624 for 2012/13 (Department of Census and statistics: HIES Survey). This is slightly different from the definition used by the UN, where the specific cut of rate is US\$ 1.25 (PPP). As per the nationally defined rate the poverty head count ratio which was 26.1% in 1990/91, has gone down to 6.7% by 2012/13. (Various HIES surveys of DCS). In fact based on these figures, country as whole has achieved the MDG goal of halving poverty by 2015 (target: 13.1%).

Although this looks very impressive, the disaggregated picture is not very satisfactory.

There are significant disparities when the national figure is disaggregated. The urban sector figure is 2.1% whereas the rural (7.6%) and estate sectors (10.9%) are lagging behind.

## 3. Poverty, Rural Poverty and Agriculture

Everyone attributes Agriculture as the backbone of the country. How true is this assertion and are paying due attention to this sector? Until about the early 1960's, the contribution of the agriculture sector



to the economy was high as 32% to the GDP, and 53% toward livelihoods or employment (Thorbecke and Svenjnar 1987). These figures have changed drastically over the years, where at present the contribution to the GDP is as low as 10.8% only around 32% depend on agriculture as a livelihood (Central Bank 2013). Is this change good? Let us look at the implications of this change.

Since, Sri Lankan economy was converted to an open market economy in late 1970, the manufacturing and services sector has rapidly increased contributing more towards the economy and have absorbed more of the labour force. This is what is expected, when a country goes through a transformation. But the question is how has it affected those who are still engaged in the agriculture sector? In Sri Lanka more than 70% still live in rural areas and majority of them depends on the agriculture sector (See Table 1). However, the poverty rate in the rural areas is 7.6% compared to the national average of 6.7% (MDG report 2014). In fact agriculture sector contribution to poverty is as high as 40%, which was the highest contributing sector (Gunawardena 2000). Past information also show that poverty rates among households engaged in agriculture (24.1%) to be higher than on non-agricultural households (16.4% (World Bank 2007). Hence, it is of concern that a large percentage of rural people who are engaged in the agriculture sector, is worse off compared to its counterparts in the urban sector.

As indicated in Table 1, there is a positive relationship between poverty levels and contribution to provincial GDP by the agriculture sector. The worst affected areas are Uva, North Central, Sabaragamuwa, Northern and Eastern provinces. In these provinces the contributions by the agriculture sector to the provincial GDP is more than 18% but the poverty rates are below the national average. This shows although large contributions are made, the output generated by the agriculture sector has not been adequate to reduce poverty levels.

Table 1

Province /District	Poverty Head Count Ratio. **		% Contribution to Provincial GDP by Agriculture: 2012 Source: ***	% Rural Households Engaged in Agriculture (2007) ++	% Provincial Contribution to National GDP: 2012 Source:***
	1990/91	2012/2013			
Sri Lanka Average	12.6	6.7		58.0	
Western	19.1	2.0	2.8	32.9	43.4
Central	30.7	6.6	15.7	65.3	9.8
Southern	30.2	7.7	12.9	69	11.5
Northern	Na	10.9	19.3	Na	4.0
Eastern	Na	11.0	19.0	Na	6.2
North Western	25.7	6.0	14.4	64.6	9.6
North Central	24.3	7.3	20.6	80.3	4.6
Uva	31.9	15.4	27	89.6	4.5
Sabaragamuwa	31	8.8	18	62	6.1
Urban	16.3	2.1			
Rural	29.4	7.6			
Estates	20.5	10.9			

Sources: \*\* Department of Census and Statistics: Various HIES Surveys;\*\*\*Central Bank, Sri Lanka Socio- Economic Data, 2014; ++World Bank, Sri Lanka Poverty Assessment, 2007



# Sri Lanka has been able to reduce the poverty head count ratio, very significantly, there are disparities, with rural sector lagging behind relative to the urban sector. Rural sector comprises more than 70% of the population, and they are mostly dependent on the agriculture sector.

As mentioned earlier, poverty is multi-dimensional and poverty headcount ratio is only one dimension, indicating only income. Hence, Let us further look at some education and health statistics of the rural population in relation to the national level, contributing towards poverty.

With regard to the health situation there several areas of concern compared to the national status, and contributing to exacerbate the poverty situation. According the Demographic and Health Survey covering 2006/07 period, the proportion of underweight children (under 5 years), is 21.7% in the rural areas compared to 16.6 in the urban

is comparable with the national figure (97.8%). What is of concern is the dropout rate after the age of 16 (after GCE O.L), for example the attendance rate in rural districts is very low compared to the national level which is also of concern (59.8%). For urban districts, such as Colombo (63.8%) and Gampaha (58.2%), the attendance rate is much higher than that of rural districts like, Pollonnaruwa (38.5%), Monaragala (51.4%) and Batticaloa (38%). Another concern is dropout rates of boys are more than for girls in the rural sector compared to the urban sector. For example, after age 16, the attendance rates of boys in rural areas drops to 55%

The reason for this situation is low labour productivity in agriculture, where a large population is producing only a small proportion of the income. For example, the value added per agricultural worker amounts to \$ 23,396 in Netherlands (only 3% engaged in agriculture), which is 66 times higher than the figure of \$ 353 for Sri Lanka (32% engaged in Agriculture). (World Bank, 2008). Hence, there is a positive relationship between poverty and the type of agriculture we are engaged in. In other words, farmers have been practising labour intensive forms of low value agriculture. There are several reasons for this situation. They include relatively low levels of diversification to high value crops, large percentage of waste due to poor packaging and transport systems, lower degree of value addition before marketing of produce, low levels adoption of new technologies available, and absence of contract farming are few of these reasons.

Why have not the poverty alleviation programmes and other development programmes addressed these issues?

Now let us look at the State run poverty alleviation Programmes and to see whether they are contributing positively towards development of agriculture as well as reducing poverty in the sector.

## 5. Poverty Alleviation Programmes

Sri Lanka implements a wide range of safety nets in the form of general welfare programmes and targeted Social Protection Schemes. (Samurdhi Poverty Alleviation Programme, under the Divi Naguma Department). This programme covers almost 1.6 million families with total population of around 5 million. However, these programmes (annual cash transfers of Rs. 13 billion) and loan schemes (Rs. 10 billion in deposits), seems to have not been able to achieve the desired impact due to problems of targeting, effectiveness (de-linked to employment creation) and sustainability (Jayaweera 2010). Rather than structured to incentivise people to look for work and lift themselves out of poverty, the



sector. The infant mortality rate for the country is 8 per 1000 live births where as it was 19 for the rural sector and 10 for the urban sector. The maternal mortality rate for the country is 33.3 per 100,000 live births, but for the rural districts such as Mannar, Hambantota, Trincomalee, Kandy and Jaffna the rates were excessive in 2010 ( MDG Report 2014).

Education and literacy are other two components that contribute towards poverty. The HIES information for 2012/13 show that, as far as primary school attendance and literacy rates are concerned, the rural level (97.9%),

and for girls it is 63.1%. The comparable numbers for the urban sector is 65.9% and 67.3%.

Hence, the above analysis clearly shows that people in the rural areas, who are mostly engaged in agriculture related activities, are worse off than the rest of the population. These people are lagging behind in most of the poverty related parameters in terms of income, health and education. We have not analyzed the estate population, which is about 5% of the total population.

## 4. Why is rural agriculture sector lagging behind?





handouts also have the opposite effect at the village level, penalizing initiative and freezing the labour mobility. Hence, it is imperative that this massive scheme needs improvement and strengthening, to assist the national programme of poverty alleviation and to cushion any future crisis.

## 6. Strategies for addressing Poverty issues in Agriculture

In combating poverty, especially in the agriculture, a new thinking is required, since youth are unwilling to get involved in the traditional practices. It needs a transformation from "blue collar agriculture" towards "white collar agriculture", literally. This paradigm shift will help to attract more youth to agriculture with higher incomes and reducing the poverty rates as well. The following section is with some suggestions in this regard.

### 6.1 Strategies for better targeting of poverty alleviation programmes

Conditional cash transfers are a scheme that was introduced by UNDP many decades ago, and had many success stories. "Conditional Cash Transfer (CCT) schemes provide the rural sector, cash directly to poor households in response to the household/individual fulfilling specific conditions such as minimum attendance of children in schools, and/or attendance at health clinics, participation in immunization and the like" (UNDP 2009). The schemes are very simple where it creates incentives for households to adjust their behaviour towards achieving nationally accepted social goals. Which means they are used (a) to incentivize private behaviour to secure positive externalities such as enhanced consumption of merit goods like health and education (b) target vulnerable groups who are unable to access merit goods due to negative income effects caused by cyclical

downturns and/or exogenous shocks (Janvry, A., and Sadoulet, E., 2004).

This strategy can be used as an incentive, to engage in certain good practices rather than giving handouts or credit without other services. For example, cash transfer will only take place, only if certain technologies are practiced: they could be in terms of technical practices such as adoption of new varieties and other agronomic practices, or in terms of growing on contract, changing cropping patterns and adopting value addition practices etc. The technical staff and the extension officers also need to be given targets to achieve, so that they can be used for performance evaluations as well. The cash transfer system also can be linked in achieving certain health and education issues. For example, dropping out of school and low nutrition has been identified as issues facing the rural agricultural households. Cash transfers can be directly linked to increase school attendance days, as well as ensuring children are given healthy nutritious foods.

The cash transfer system can be formulated (1) targeting to ensure vulnerable groups including unemployed youth, female headed households and large families with children and elderly to support receive assistance, (b) improving loan effectiveness through linking beneficiaries with skills training and (c) removing the current disincentive effects that the existing handouts instill.

### 6.2. Farming as an agribusiness

In agriculture, agribusiness is a generic term that refers to the various businesses involved in food production. In Sri Lanka, majority of the small farms are still not in the mode of an agribusiness. Which means practices related to normal businesses are not practised? For example, small farmers do not have the

practice of doing a financial analysis to decide on the return to investment. In many developing countries, including Sri Lanka the form of agribusiness one can observe, can be categorized mostly as, Contract Farming (CF) and Out Grower Systems (OGS). Although it was mainly started by trans-national countries, as found in many less developed countries, in the case of Sri Lanka, several locally owned companies (Ceylon Tobacco, Palawatta Sugar, Poultry producers such as Prima, Bairaha, Maxis etc.), practice this mode of agribusiness. Given many problems farmers face, with respect to getting quality seeds and other inputs to negotiating a reasonable price, and absence of an assured market, contract farming and out grower systems are ideal for a start, and institutional support is necessary for more farmers to get into this mode of production. This method will reduce the number of intermediaries, since the mark up is very high, when several intermediaries are involved. However, over time, farmers need to think, in terms of converting their farms to an enterprise. The department of agriculture has introduced a Farmer Business School Model to educate farmers on business principles. This is a very good start, and need to be extended with credit plus services, since farmers still have problems of accessing credit related to a business plan and linking them to an assured market.

### 6.3 Introduction of new technologies

The future for agriculture holds in investing in new high yielding technologies, to increase land productivity and mechanization to increase labour productivity. In addition, any new technology should be of less drudgery and attractive to youth. In that context, several areas can be suggested in this regard. Land productivity can be increased through engaging new technologies such as protected agriculture and the use of micro irrigation, where high value crops are grown under protected environments like poly tunnels. However, to ensure its sustainability, marketing concerns need to be looked into through contracts. Mechanization is a must to reduce drudgery. Though controversial, some kind of land consolidation, (example through some agreements rather than ownership) may be necessary to meet economies of scale.

### 6.4. Value addition to agriculture produce

Time and again we hear of farmers dumping their produce not being able to sell at a favourable price. There are news items of dairy farmers throwing their milk to the river. Also post-harvest losses are also of concern, where it can be anything between 20-40%. Hence, this is not about a problem of lack of production, but how what is produced



can be converted to a profit. This is mainly because no appropriate action is taken with regard to value addition to the raw materials that is produced on the farm. The other reason is due to inadequate planning same output in excessive quantities are produced during a season. Take a simple situation of post-harvest losses of vegetables and fruits. This is mainly due to poor packaging, handling and transportation. One can see especially with perishables, they are tightly packed into gunny or plastics bags, and stacked in lorries to be transported to the city centers. By the time they are unloaded a large quantity



has got damaged. Standardization or grading and neatly packed plastic crates is a value addition technique, where not only it reduces the waste, but will attract better prices, since produce are graded and standardized.

The Industrial Technology Institute, has developed a large array of proceed foods, from drying to vacuum packing. But hardly one observes such items in the market. If available they are very expensive. This is mainly because, our public is not accustomed to eating new processed vegetable and fruits (except few items like jams, cordials, dried jak and breadfruit), hence, production volumes are low and highly priced. Hence, consumer surveys with respect to tastes and preference need to be conducted before such products are produced, and there need of demonstrations to enlighten the public about new processed food items.

Another area of thought is identifying geographical areas for specified cropping systems, and to plan for year round production, reducing gluts and scarcities. Especially with new information available on agronomic feasibilities, new technologies such as micro-irrigation and protected agriculture as well as the availability of market information and demand parameters, planning such a course of action cannot be that difficult.

## 6.5 Value Chain and Traceability

Increasingly in agriculture, if it is done as a business, we talk about a value chain. That is value-added at each production point is considered here. Example: Rice, processed, stored, packed and retailed. This is a very simple value chain where value is added at each point. We have to consider all the transaction costs at every point. There are two types of transaction costs: Observable Costs, including transport costs, handling etc. and un-observable costs including information search, negotiations, phone calls etc. Generally it has been calculated around 15% and 70% of the transaction costs is for information and information search. In the value chain approach to developing a particular sector to get the best value, it includes first choosing the sub sector (Rice), analyzing and identifying constraints, developing strategy to solve problems, implementing the strategy and monitoring its success.

Along with the value chain, another important concept is "traceability".

That is one should be able to trace the whole process that has gone into from production to marketing of a product. This is becoming increasingly important if one is interested in exports. In the export market, there are certain standards that are required of a produce. Especially consumers in the western world are very conscious about the standard of the product. It can range from refusing products where child labour has been used to poor phyto-sanitary conditions. Hence, when a consumer buys a product, he/she should be able to trace the history of the product. For example if one buys a "Doll" banana from a shelf of a super market, the information which is on a sticker with a barcode on the banana can be used to trace the farm the banana was produced by going into the web site of the Doll company. Hence, in the future, if we want to export (Even in Sri Lanka, consumers are quality concerned); one will have to consider the concept of "Traceability" of the value chain. ICT systems are very useful for this process.

## 7. Conclusions

The above account shows that although Sri Lanka has been able to reduce the poverty head count ratio, very significantly, there are disparities, with rural sector lagging behind relative to the urban sector. Rural sector comprises more than 70% of the population,

and they are mostly dependent on the agriculture sector. Not only of the poverty head count ratio which is based on the income parameter, some of the health and education statistics are also not satisfactory, contributing towards poverty. Hence, it is imperative there is a need for a transformation in the agriculture sector, to reduce poverty, to attract youth to engage in this sector and to live a comfortable life. Some of the transformations suggested include better targeting of poverty alleviation programmes, introduction of business principals to the agriculture sector and development of value added products using the principles of value chain approach.

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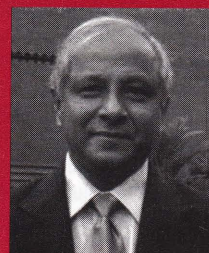
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# “COMMUNITY FORESTRY”

## AN EFFECTIVE MECHANISM TO PROTECT AND PROMOTE FOREST AND ITS RESOURCES IN DRY AND INTERMEDIATE ZONES

### A CASE STUDY

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#### **Abstract**

*Community Forestry Approach is a preferred and cost-effective method for improvement and protection of forest and forest resources. Community involvement could be succeeded through immediate cash benefits through intercropping and other income generating programs. Microfinance and micro-enterprise development are important to strengthen rural finance and market capabilities of the participating communities. Livelihood development through community forestry will help to sustain the forest cover in the long run.*

**Keywords:** Community Forest, Agro-forestry, Inter-cropping, Self Help Groups, Community Based Organisations, Microfinance, Gender Equality

#### **Background**

Similar to other Asian countries, Sri Lanka's forest cover has dwindled having direct and indirect impacts on the livelihood of the local communities and the natural environment. Various programs have been launched in the last two decades to address the issue of deforestation and forest degradation in Sri Lanka. Community Forestry approach has been introduced as one of the practical models for sustainable management of forest resources and livelihood improvement of the forestry communities. However, community forestry should focus on three areas to convince general public as well as technocrats. The related questions to cover above focus areas are: What is community forestry?, Why community forestry is important?, and What benefits available to rural poor? These are the common questions raise by communities and development workers during the introduction of community forestry approach. This article focuses on these three areas to assess the merits or de-merits of community forestry.

#### **What is Community Forestry?**

Community forestry has been defined differently by different professionals and agencies. As per the definition given by Martel & Whyte, 1992, community forestry is a village level forest activity done with villagers. The main issue of this definition is whether we define community forestry as an activity that can take place only at the village-level? If forest covers entire region or district including urban area, can we include these areas?

“Community forestry is an evolving branch of forestry whereby the local community plays a significant role in forest management and land use decision making by themselves with the facilitating support of government as well as change agents. It involves the participation and collaboration of various stakeholders including community, government and non-governmental organizations”. (FAO, 1978).



Another definition says that "Community Forestry is "an approach to forest management that actively promotes the rights of the people living in and around the forests to both participate in forest management decisions and to benefit (financially and in kind) from the results of the management". "This involves a new role for foresters for working with people rather than policing them". (Jane Carter 2010).

As Eckholm et al, (1984) argues "Successful community forestry requires... genuine popular participation in decision-making... Experience has proven time and again that participation is more than a development cliché; it is an absolute necessity if goals are to be met. But working with people rather than policing them is a new role for many foresters."

Revington (1992), identified few characteristics of community forestry as follows: the local community controls a clearly and legally defined area of forest; the local community is free from governmental and other outside pressure concerning the utilisation of that forest; if the forestry involves commercial sale of timber or other products, then the community is free from economic exploitation of markets or other pressure from outside forces; the community has long-term security of tenure over the forest and sees its future as being tied to the forest" (J. Revington Rainforest Information Centre, 1992.).

According to above definitions and our field experience since 1995, we have our own definition in Sri Lanka. Accordingly, 'Community Forestry Approach' is a process in which a community is mobilised, forestry and related development needs identified, prioritised and government or private sector resources mobilised to meet the forestry and livelihood development prioritise of selected communities' (Steve Hunt, 2008).

The issues addressed by any community forestry approach for improved forest resources and reduction of poverty in the dry zone should include:

#### At village level

- Low agricultural productivity (lack of water and access to improved technologies);
- Lack of physical and natural capital: inadequate access to land, roads, water supplies and quality education; a declining natural resource base;
- Lack of and inadequate opportunities for alternative income and poor terms of trade  
(lack of skills and financial capital, and poorly developed group organisation); and
- Poor community participation (lack of effective representation at village and District levels).

**Picture 1 - Preparation of a new *chena* where all forest trees are destroyed**



#### At central levels

Government extension workers without motivation or with low skills engaged in extension services. Villagers are too poor and too busy to risk adopting any new activities or initiatives that cannot generate immediate returns.

#### Community Forestry - Evolving Efforts

A number of projects have addressed these problems, including the Participatory Forestry Project (PPF) funded by the Asian Development Bank (ADB) and AusAID and the ADB-funded Forest Resources Management Project (FRMP) that was completed in 2008. Useful lessons have been learned from these projects, but none of them focussed on community participation in the management of "natural" forests. Although the FRMP addressed issues relating to remnant forests and overall forest demarcation, a viable community forest management approach was not developed. The first practical community forestry project was 'Sri Lanka Australia Natural Resource Management Project (SLANRMP) implemented from 2003 to 2009. The current Sri Lanka Community Forestry Program is an extension of SLANRMP.

#### Figure 1 - History of Forestry Development Programs in Sri Lanka

- Taungya System - Started in Burma in 1856 - In Sri Lanka prior to 1950s.
- In 1970s - In 1978 Eighth World Forestry Congress, which was devoted to the theme "Forests for People", served to give the concept of community forestry rapid and intensive exposure.

- In 1980 - The concept of Social Forestry was introduced to the "National Forest Policy of Sri Lanka".
- In 1980 - Social Forestry & Extension division started in the Forest Department
- In 1983 - Social/Community Forestry activities initiated in Sri Lanka.
- In late 1980s - Several Community Forestry activities were implemented under Sinharaja and Knuckles Projects.
- In 1990s - Natural Resources Management Project (DFID) and Participatory Forestry Project (ADB)
- Kanneliya Project (Contributing to the Conservation of the Unique Biodiversity of the Threatened Rain forests of Southwest Sri Lanka) - GEF funding - 2000 - 2006
- In 2003 - "Sri Lanka Australia Natural Resources Management Project" (SLANRMP) (Australian Aid) 2003 -2009.
- 2012 - (Current program) Sri Lanka Community Forestry Program (SLCFP) (Australian Aid). 2012 - 2016.

#### Community Forestry - Why and How to implement?

The general belief is that even poor are entrepreneurial and need small support (financial and technical) to graduate out of poverty while protecting the environment. The first step in this regard is to motivate participating communities and stakeholders. For this purpose, strengthening of village



level institutional (such as Community Based Organisations -CBOs) capacity is essential. It will also be a positive move if all poor members especially women are also included in the Self Help Groups and microfinance activities. Village communities also have multiple livelihood opportunities such as day labour, chena (slash and burn, see picture 1) farming and operation of small land holdings, cattle rearing, non-timber forest products (NTFP), fishing, and producing traditional handicrafts. Community forestry should support to improve the productivity of such livelihood activities as well in order to reduce the community pressure on forest resources.

It is also believed that introduction of innovative reforestation actions would help for poverty reduction of vulnerable communities while improving forest cover and other cascade resources. Therefore, a special support program is necessary for innovations to maximise benefits to rural poor while improving environment and biodiversity. It is essential to improve forest cover initially and then the improvement of cascade resources subsequently. The argument is, if forest cover could be protected and promoted, it is easy to improve other cascade resources like soil, water etc.

Under the current Sri Lanka Community Forestry Project, rural communities in Dry and Intermediate Zones in Sri Lanka are managing their village resources (such as land, forest, water, soil, wild life, human etc.) in 167 sites in 18 districts in a sustainable way through the participatory management process. They have learned and experienced this practice and methodology through the Sri Lanka Australia Natural Resource Management Project (SLANRMP) which was the first real community forestry program implemented in Sri Lanka.

### Benefits for Small Farmers and Biodiversity

As at December 2014, a total of 21,439 hectares of new forest cover has been established in 167 sites within 18 districts in the dry and intermediate zones of the country (see picture 2). Increased forest cover definitely helps to promote biodiversity in the locality. Forest planting has been distributed under three categories namely, forest enrichment, buffer zone planting and farmers' wood lots. The ownership of farmers' wood lots is given to farmers through a government approved agreement. Out of 296 farmers' wood lots, 231 women received the land ownership through legal agreements. During the first 4 – 5 years, farmers could practise intercropping with various cash crops such as cowpea, green gram, maize, millet, ground nuts, chillies etc. The total earning of 296 wood lots was more than Rs, 10 million. Farmers' average income is calculated as Rs. 32,000 per crop. Actually, farmers' wood lots could be considered as a land alienation program without doing traditional land reform systems. This could be considered as an innovative step to promote forest cover.

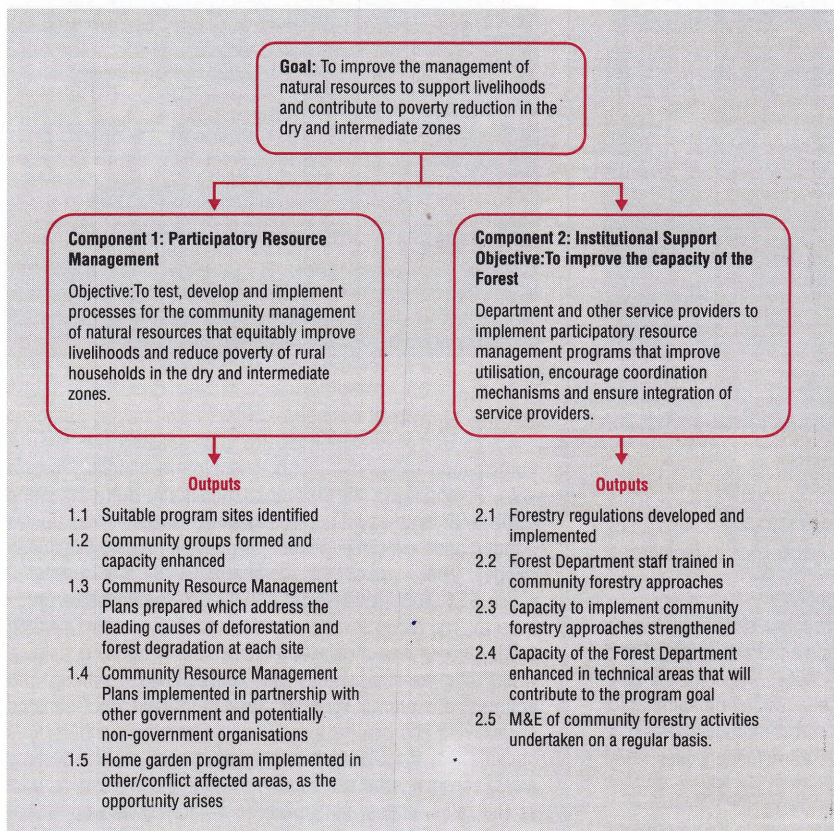
Community Based Organisations (CBOs) have been formed in all sites. Forestry Management Plans have been prepared and in operation in all 167 sites. Total membership of 167 CBOs is 5,621 households, including 469 female office bearers (37%) and 824 male office bearers (63%). As part of CBO activity, microfinance and micro-enterprise programs were also introduced to improve youth entrepreneurship and village savings. With the introduction of this program, nearly 14,000 farmers opened up new accounts with commercial banks. Average savings per farmer is Rs. 8,921. The main impact of increased income of adjacent farmers was the reduction of community pressure on forest and cascade resources. Increased community incomes and savings illustrate the reduction of poverty in working communities.

37,088 home gardens were developed by planting forest, food and fruit trees. In addition to forest trees, mango, papaya, jack, breadfruit, orange, guava, pepper and other local fruit trees were planted in home gardens. Through these different species, farmers will be able to earn additional income throughout the year and in different seasons. It is also provide opportunity for women and

*Based on this background, the Forest Department has launched the current Sri Lanka Community Forestry Program (SLCFP) in 2012 with the support of the Australian Government. Australia has granted AUD 4.9 million for this four year program. Australian funds are being channelled through UNDP for better management of program goals and objectives.*

**Figure 2 - Program Description Chart**

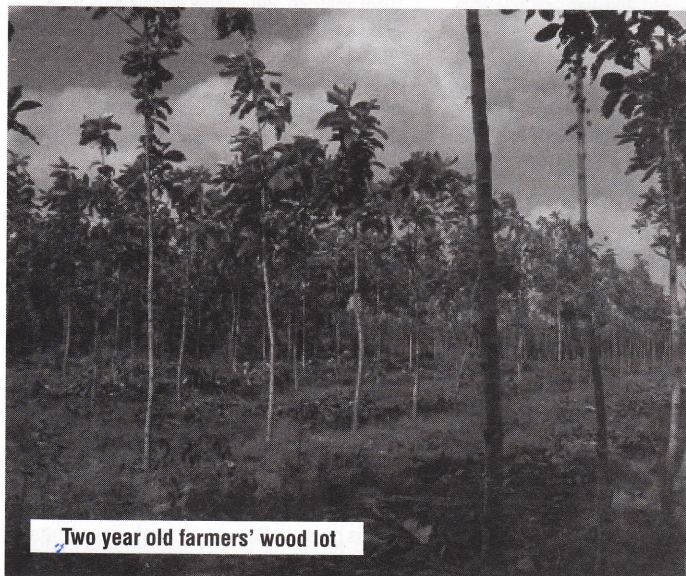
The program goal, components, component objectives and outputs are summarised below:



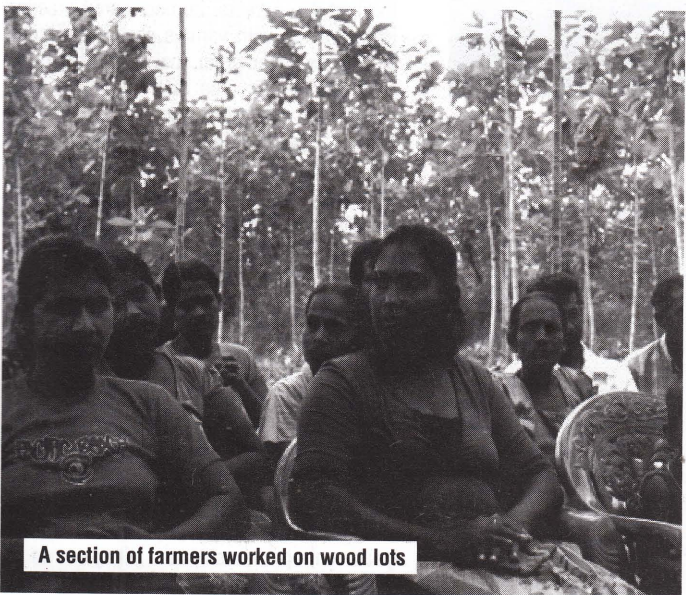


men to collect firewood within their own home garden. Even if they need some timber for household purpose, they could harvest trees within their home garden without harming the forest. It was observed that nearly 25% of firewood is being collected from their own home gardens. It is also estimated that nearly 40% of timber requirement is received from home gardens.

**Picture 2 and 3 – Farmers' wood lots in Puttalam**



**Two year old farmers' wood lot**



**A section of farmers worked on wood lots**

Forest fire is the main threat to forest and forest resources. Effective programs are being carried out to control forest fires. After giving the ownership of the forest land to farmers, they control forest fires through collective efforts with other CBO members. Farmers in CBOs have developed fire belts and a live fence (with cactus) in vulnerable areas to prevent and control forest fires. Educating communities is also effective in controlling forest fire. So far not a single forest fire has been reported in community forestry sites.

Strengthening of CBO capacities has been done through a series of training and mentoring programs. In addition, awareness raising and Participatory Rural Appraisal (PRA) programs were also conducted in villages. Most of the CBO members including more than 50% of female have been trained on leadership, book-keeping, record keeping, financial management and communication skills. 77 such training programs were conducted and total participation was 1,536 farmers.

The main activities under this component are providing training to the community

which will ultimately enhance their livelihoods. The main trainings conducted were livestock development, bee keeping, new agricultural technologies, plant nursery management, plant budding, handcrafts, eco-tourism, fresh water fish, preservation of ayurvedic medicine, food processing and tailoring etc. 814 such training programs were conducted and nearly 5,500 persons participated in these programs. More than 60% of participants commenced micro-enterprises at cottage level.

**Picture 4 and 5 – Forest materials collected**



### **Gender Equality**

Participation of women in CBOs is high in general [Badulla 45%, Polonnaruwa 53 %, Ampara 65%] and there are some CBOs with women alone [Sangaman Village, Akkaraipattu Range] and with men alone [Wangiyakumbura, Welimada Range]. There are 5,621 members in 167 CBOs, out of which 824 [63%] males and 469 [37 %] females are office bearers. The records show that women derive a considerable proportion of the direct benefits of the project, mainly in wood lots, livelihood activities, together with training and impressive economic growth, savings, and indirect benefits of receiving economic support for their family members. It is obvious that the CFP is changing the life of people in many ways, especially the self-esteem of men and women, as well as the roles, status and power at the family and the social



spheres. The vital factor found was the very significant opportunity for empowering women in the socio-economic and in socio-politics. Appointing a male as the President of CBOs has become a popular practice, which can be seen as socio-cultural factor, though capable female members are available. But mostly women work as Secretaries and Treasure of CBOs. It was noted that females are better than men in record keeping, book-keeping and financial management. The general observation indicates that voice of women and decision making were not strong as men. However, investigation of minutes of CBO monthly meetings clearly indicated that suggestions made by women were also accepted and most cases were seconded by men. Ownership of land by women has been increased under the distribution of farmers' wood lots. Out of 296 farmers' wood lots, 231 women received the land ownership through legal agreements. Access to credit also has increased due to functions of Self Help Groups and confidence of repayment due to new income opportunities. Access for clean water at closer places is ensured with agro-wells [Ampara, Batticaloa, Puttalam], and these result in better family health and education. With knowledge and social status obtain by both men and women resulted in reducing violence against women and girls. However, in order to meet the objectives of the CFP, it is essential to ensure gender equality or mainstream gender into the policies, programs and practices of the Forest Department.

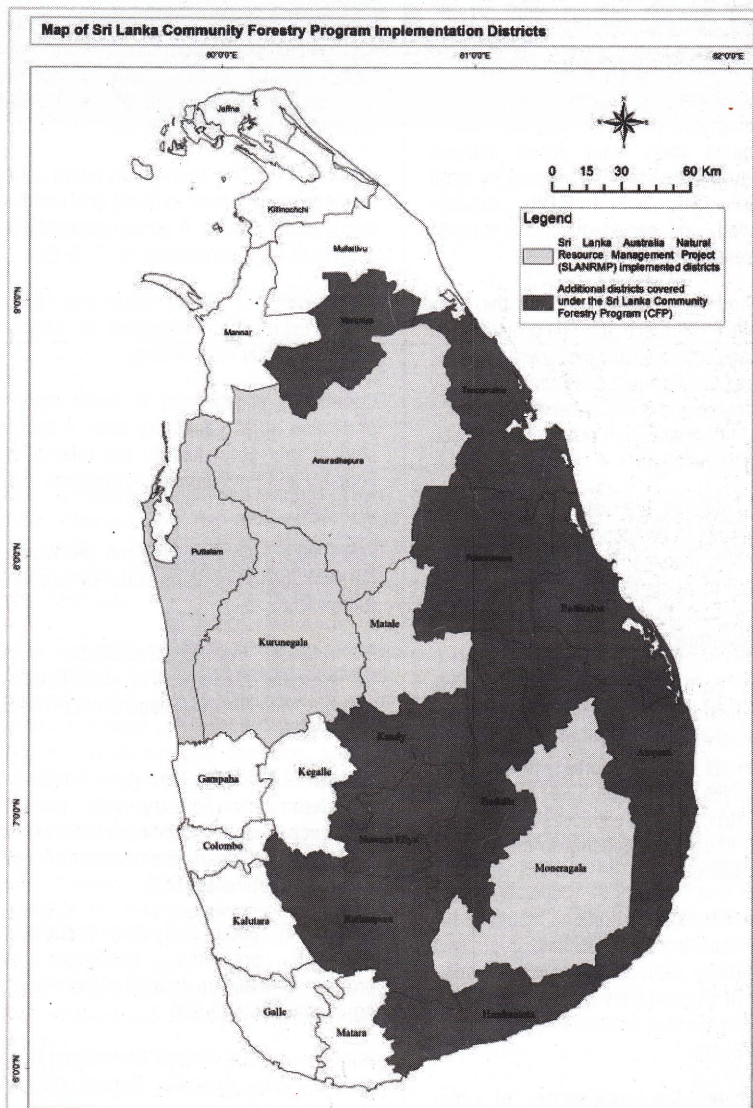
### Community Acceptance and Program Sustainability

The immediate and ultimate impact and sustainability of the CFP depend on whether the communities accept the CFP principles and participate enthusiastically. The long-term sustainability of the activities undertaken within the CFP will depend on strengthening community organisations and diversifying income sources from forestry activities. Among the forestry activities, the agroforestry program is an ideal activity for this purpose. It is successful in almost all CFP sites within farmers' wood lots. This program is very attractive to communities and they are keen to protect and manage their wood plots. Sustainability of the program through this component is ensured due to generation of significant livelihood support to communities. Sustainability will also depend on several other factors, such as: community mobilization; formation of Self-Help Groups, linking micro finance institutes to the CBOs; proper guidance on marketing; and attending to their problem solving processes. The main factor for program sustainability is using the existing structure of the Forest Department to implement and maintain program activities even after the project period. The ownership of the CFP has already been grabbed by the Department. Government of Sri Lanka is also committed to continue and maintain community forestry sites with required financial contributions by the Treasury.

Picture 6 – A CFP site in Anuradhapura



Map 1 – CFP implemented districts





## Lessons Learned

Sri Lanka Community Forestry Program has generated lessons which provide useful strategic guidelines for the future of community forestry management in Sri Lanka. Importance of community forestry also could be determined through the lessons learned. These include:

- The Community Forestry approach is the preferred instrument of forestry management in the dry and intermediate zones, and should be expanded and replicated.
- Community forestry is the most cost effective approach to promote and protect forest cover in the country.
- The most suitable unit for management of program sites is one that contains the inhabitants of the selected village/s, their agricultural land resources, associated water storage and tank systems, the forested catchments of these water systems, and other natural and plantation forests. This could be named as 'Functional Resource Unit' (FRU) under the program.
- Plant nursery management, enrichment planting and plantation development in degraded areas along forest margins can be successfully conducted by rural communities, with suitable capacity building, and provided suitable species are selected.
- Community management is the only practical approach for fire protection in dry and intermediate cascades / forests. Annual fires at most sites can be virtually eliminated and this has been perhaps the most effective tool in resource protection and regeneration.
- Rural women are valuable partners in community development and natural resource management, and every effort should be made to ensure their on-going active participation / involvement and empowerment.
- Most participating communities have demonstrated a willingness to contribute increasing amounts of labour and materials to resource management initiatives as well as community infrastructure and services. But they also need short term benefits to compensate their labour.
- Once the local institutional capacity has been built, communities have confidence in dealing with other service providers and GOSL, and they have a mechanism for engagement with a large numbers of households.
- Facilitate the availability of non-forest benefits, including livelihood development activities offered by various agencies, especially Microfinance and

Micro enterprise service providers, for individual members of communities by coordinating such agencies with CBOs;

- Promote networks of CBOs at district, regional, and (in the future) national levels to play a role in coordination and advocacy.

## Conclusion

Community forestry has proved that it is the most cost-effective method for improvement of forest cover and its protection. This is the best model to reduce community pressure and wild fire in forests especially in dry and intermediate zones. This approach is highly productive and low risk to attract rural communities for voluntary forest protection. Professionals, technocrats and researchers are invited to carry out further investigations on this approach and propose innovative models to replicate this model throughout the country.

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# SOCIAL SCIENTISTS IN NATIONAL AND INTERNATIONAL DEVELOPMENT: TOWARDS A NEW IDENTITY

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## Introduction

Social Scientists in Sri Lanka and elsewhere are doing a silence and leading role for the betterment of the national and international development process. Development projects are one of the pivotal sectors that social scientists can enhance their services at different levels of a project cycle. The aim of this paper is to identify, analyse, and emphasis an ideal role of social scientists in the field of 'development'.

The concept of development in its broadest sense includes economic development and social and cultural change that accompany it. Implicit in the concept of development is the notion that societies can be placed on an evolutionary ladder, with the Western developed nations at the bottom. The concept of development represents the world as in "a state of linear progression and change in which the North is 'advanced' and the South locked into a static traditional which only modern technology relations of production can transform" (Gardner and Lewis, 1996). Especially, it is a tremendous challenge that a county like Sri Lanka is moving into a better position in the development ladder facing its

inherent issues as highlighted above. Thus, social scientists are the key players who can initiate a positive atmosphere towards development activities in collaboration with other scientists.

Nobel laureate Amartya Sen defines "development must be judged by its impact on people, not only by changes in their income but more generally in terms of their choices, capabilities and freedoms; and we should be concerned about the distribution of these improvements, not just the simple average for a society" (Sen, Amartya, 2000). This definition implies that the development is not merely a process of improvement in individual or household income, but there are many social factors to be achieved. Therefore, there are many tasks to be performed to achieve an advance level of development with direct involvement of social scientists in the society.

There is no doubt that within and beyond countries in transition, knowledge needs to be gathered to enable us to understand better about the problems and the direction

of the change these countries are facing. Social science is a distinct field of study which is keeping direct linkages with the people of society as a whole. Different segments of people are the key sources for social scientists that they continue their research and development initiatives. The physical and natural sciences are important to our understanding of the world and the use and development of technology and techniques in, for example agriculture manufacturing, mining, and environmental protection and rehabilitation. In the "areas of health, education, social security [power and politics, social problems, development and planning, policy formation], and welfare, it is a broader spectrum of the social sciences that will enable human groups, whether at a local or global level, to function in health, [social justice], and well-being by providing opportunities and a more equitable distribution of wealth and income to the betterment of all members of society" (Wood, John. et. al. 2002). The importance of the social science can be indicated by listing some of the core areas, where social science professions and disciplines can contribute.





They are as follows:

1. Basic research on social problems;
2. Dissemination of knowledge acquired through the practice;
3. Policy implementation process;
4. Policy formation activities;
5. Monitoring and evaluation process on implementing development activities;
6. Impact assessments on implementing development activities;
7. Planning process of development activities;
8. Advocacy level roles;
9. Finding remedies on social problems;
10. Enhancement of physical and mental health;
11. Treatment of diseases, ailments and a large number of health conditions;
12. Identifying the living conditions needed for a healthy life;
13. Provision of education at primary, secondary and tertiary level;
14. Development of and training for new skills and training to enhance people's capabilities;
15. Ensuring the availability of social welfare, such as disability and old age pensions, assistance for families and the disadvantaged;
16. Attempting to ensure that there is a reasonably equitable distribution of the

economic wealth of a nation through taxation and other redistributive mechanisms;

17. Providing social justice through legal and administrative actions;
18. Promoting ethical practice and sound governance;
19. Preservation of law and order;
20. Protection of minors and disadvantaged groups;
21. Ensuring a safe working environment and appropriate working conditions; and
22. Provision of the necessities of life in areas such as water, power, gas and transport;

## 2. Role of the Social Scientist

Social scientists play a number of roles while engaging in these professions and disciplines. First of all, they are there to identify problems that need to be addressed, including problems that have not yet necessarily been recognised as such by policymakers. Secondly, their role is to analyse mechanisms, processes and structures and thus to understand how society functions. Incidentally, this can also open spaces for public debate and highlight possibilities for political governance. The third, and in my opinion most fundamental, role of the social sciences is, that of critically scrutinising society and placing trends and developments in a critical perspective. Much like art and the media, the social sciences are, in a way, the 'lungs' of a

society: in the best case, they contribute to a society's self-reflection upon who they are, and where they can and want to go. For this reason, in totalitarian systems the social sciences are typically either suppressed or instrumentalised by those in power (Sgier, Lea. 2012). It is a critical matter to discuss further in terms of Sri Lankan context. As we all know, politicisation is a common feature in many institutions and it is happening at every level of governance. Thus, social scientists have become underutilised and there is no favourable atmosphere for them mainly due to these key obstacles. The fourth and very vital role is the engagement in development planning process; especially in infrastructure development sector such as transport, energy, water and sanitation, health, urban development, etc. Fifth, the most essential role is contributions towards policy formulation and implementation efforts by social scientists. As a society, policy formulation depends on the stage of development that the society is passing. If the society is plagued with different social problems and issues, though policy formulation is essential, policymakers inherently pay attention to short term remedial actions. However, if the society is gradually transforming towards a development path, then policy formulation and implementation becomes a natural process. Sri Lanka has now experiencing an advanced level of development, after the total control of terrorism in 2010, and now in the process of policy oriented development and planning. Therefore, it seems that there are opportunities for many social scientists to engage in policy formulation and implementation process. For instance, National Youth Policy, National Migration policy, National Family Policy, etc. are some recent efforts led by social scientists in Sri Lanka.

## 3. Development Imperatives the Responsibilities of Social Scientists

Development is the most crucial challenge and requirement that we are facing today due to many reasons. It is essential to highlight why it is crucial for Sri Lanka. As highlighted above, the country has suffered for three decades from highly devastated terrorism and the economy was at relatively low growth during this period. After the defeating of terrorism in 2009, the country is now open for a great opportunity for social harmony and integrated development process (Karunathilake, 2007). In addition, the country is passing its golden stage of demographic transition which is having very high representation of youth in the population pyramid (Indralal Silva, 2004). With the well-established social welfare policies continued since colonial and post-colonial periods the country has earned several favourable social capital resources (Jayasooriya, 2010).

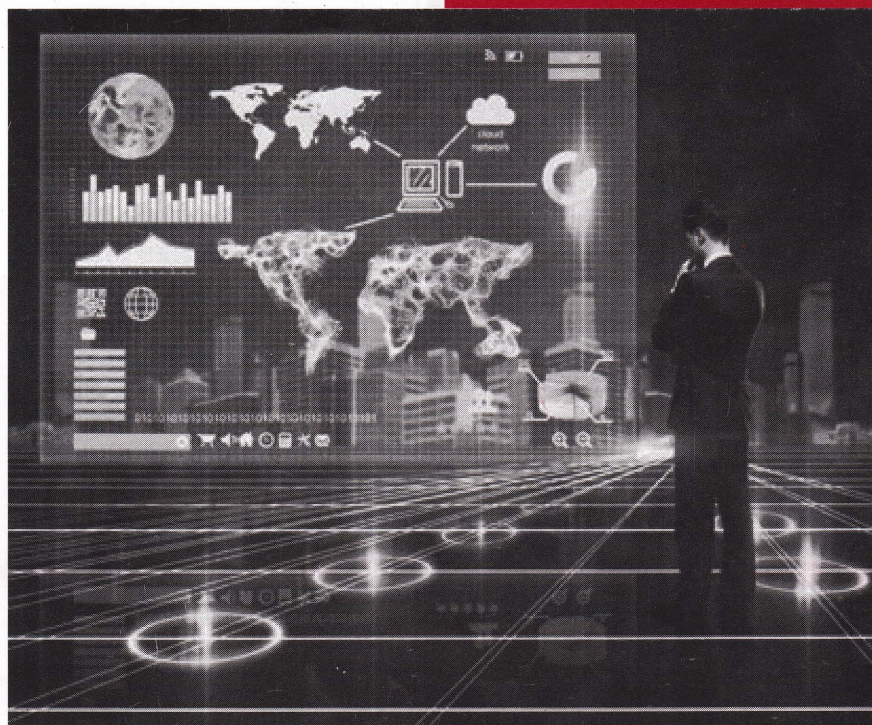


Furthermore, Sri Lanka is located in a geo-strategic point in the Indian Ocean and it is a positive factor for the country with the changing world super power (hegemony) from the West (USA) to the East (China). Thus, Sri Lanka is in a position to capture global maritime and commercial demand and become a hub of South Asia. With all of these positive trends, the existing natural resources are added values for a fast journey of development. Thus, social scientists are a key group, which could encapsulate all these positive trends and bring a holistic development for the country.

Social scientists in Sri Lanka are represented in different institutional bodies have been confined to structured role for most occasions. There is a need to break this ice and get all social scientists contribution for national development. The problem is how to break this ice and line up all social scientists to contribute towards nationally interested targets or goals. We need very dynamic leadership under a common platform that everyone can accept and engage. Sri Lanka Association for the Advancement of Science (SLAAS) is an ideal platform to achieve these goals with a very clear vision and mission. Its key branch, Section F needs to fulfil this requirement with the support of other key stakeholders such as National Science Foundation, National Research Council, and University Grant Commission. Perhaps, we may be directly link with our institutional goals and targets to be achieved within a well-defined time frame. However, if we are fixed or organised into an institutional framework, we may not highly think about the contribution to be made for national development. Then, how do we understand this situation with analytical and constructive criticisms?

There is a possibility to understand this situation using the functional perspective, which is one key sociological aspect. It emphasise the importance of understanding the manifest or latent functions when we are doing a functional analysis. According to Robert K. Merton "manifest functions are those that are intended and recognized. These are functions which people assume and expect the institutions to fulfil. For example schools are expected to educate the children in knowledge and skills they need. The manifest functions are obvious, admitted and generally applauded. Latent functions are unrecognized and unintended functions. These are the unforeseen consequences of institutions. Latent functions may be irrelevant to manifest functions, for example the big functions organized by schools may not impact the purpose of the education. Latent functions may even undermine manifest functions."(http://

www.sociologyguide.com/). If it is the case, we social scientists play at different scales within the defined manifest functions or framework. National development is one of the manifest functions that we need to fulfil in our daily routine work and it is expected and intentional. If we represent a University department it is very clear that we have a role to play at the national development process. Teaching at the department itself makes some directions to the process of national development. Perhaps, we can recognize it as a manifest or latent. Whatever the level of function that we are engaged with other institutions, there are many benefits towards professional development as well, and it will also give us some recognition as an applied researcher or scientist within the academia. Some benefits are tangible



and others are intangible. Especially, the platform available for social scientists in the development field is a goldmine and it needs to be captured by them by engaging in research and consultancies, which is welcomed by all government and international development agencies.

#### **4. International Organizations and Engagement of Social Scientists**

As a part of these requirements, Social Scientists presently engage in different activities that are related to development projects handled by the government and international development agencies. The nature and the frequency of these engagements in current context in Sri Lanka and other parts of the world is fairly high than few decades back.



scientists' involvements in development initiatives in all domains in Sri Lanka and global context? This is mainly due to the past failures of development projects (first put last and last put first – Robert Chambers) implemented in these countries. We are well aware that two basic approaches of development activities are top-down approach and bottom-up approach. There is a more tendency towards bottom-up approach at present, due to past failures. As a result of the development discourse in the 20th century, which is modernization articulated by developed/modern countries and global development partners (World Bank, Asian Development Bank, World Health Organization, UNDP, etc.), it has influenced on the third world countries as well. However, recently these organisations have identified their gaps in their planning process and have taken some steps to reformulate their development plans through introducing new policies and regulations. It has resulted with more avenues open for social scientists to engage in development planning, implementation, monitoring and evaluation in all development programs funded by them.

Thus, it is vital to look at a glance how do they developed their policies and regulations during the last three-four decades capturing most essential elements related to development planning, implementation, monitoring and evaluation. In this purpose, Asian Development Bank (ADB) is taken as an example, since its main focuses is on the Asian region. Among ADB policies social safeguard is most important for social scientists and it is worth to analyse how it gradually improved in the process of ABD involvement in development projects in Asia. When examined very carefully, following steps show the gradual improvement of their social safeguard policies on involuntary resettlement, environment management, and management of indigenous people.

1. ADB formally introduced environmental assessment into its lending operations in 1979.
2. A relatively comprehensive Environment Policy was adopted in 2002.
3. The Involuntary Resettlement Policy was formulated in 1995 based on the World Bank's policy on involuntary resettlement. It revised in 2006.
4. ADB adopted its Policy on Indigenous Peoples in 1998.

While operating these policies related to environment, involuntary resettlement, and indigenous people, ADB identified gaps in these policies further as a result of implementing these policies in funded development projects in Asian countries.

As a result of these gaps, again ADB decided to revise their safeguard policies related to environment and society, as follows:

1. In December 2004, ADB management approved a concept paper, to enhance the effectiveness of ADB's safeguard policies.
2. A consultation draft of the Safeguard Policy Statement (SPS) was posted on ADB's website in October 2007 for external consultations.
3. The second draft of the SPS was made available for public comments on ADB's website from 3 October to 4 December 2008.
4. Consultation workshops on the second draft SPS were held 18–21 November 2008 in Manila.
5. ADB Board has taken it to discussion in February 2009.
6. 20th July 2009 ADB Board of Directors Approved the New SPS.
7. It became effective on 20th January 2010.

Today, the ADB works with this SPS and they will further revise it in the future with the outcome of the policy implementation in their development projects. Thus, it is a very realistic approach to protect the rights of the people in every society and culture. When examining carefully, the team members who improved this SPS included many social scientists as well. (Anthropologists, Sociologists, Economists, Environmentalists, etc.). The main objectives of social safeguard policies are;

1. Avoid adverse impacts of projects on the environment and affected people, where possible;
2. Minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and
3. Help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

Overall, it focuses on the improvement of living standards of the people affected by development projects. Thus, there are many elementary tasks to perform to keep these safeguard policies in action at the time of project designing stage. In addition, there is a need for policy updates. When we concern on the ADB SPS, it needs further improvement on aspects such as human rights and food security. These two fields are very critical on project affected persons and if there is a violation of human rights as a result of project implementation there should be a mechanism to avoid such circumstances. Food security is

critical when people are displaced due to project activities. Compensation and resettlement efforts may not meet food security measures easily since it is a time bound factor. It needs sufficient attention at the time of implementation of resettlement action plans.

As ADB improved their safeguard policies related to environment and social safeguards other development partners also went through similar processes to improve their safeguard policies. Following facts shows how World Bank (WB) and other development partners have improved their policies during the last couple of decades.

1. WB revised its safeguard policies on indigenous people in 2005 and on physical cultural resources in 2006.
2. The International Finance Corporation (IFC) adopted its Policy and Performance Standards (PS) on social and environmental sustainability in 2006.
3. European Bank for Reconstruction and Development (EBRD) adopted its environmental and social policy in 2008.

All these landmark events of global development partners show their gradual commitment to safeguard the environment and social requirements while minimizing the risk levels in project implementation. Among these development partners IFC safeguard policies (PS) are considered much comprehensive than other development partners. IFC has eight policies in their operation in development project implementation at any country. They are:

1. PS1: Social and Environmental Assessment and Management System (2006)
2. PS2: Labour and Working Condition (2006)
3. PS3: Pollution Prevention and Abatement (2006)
4. PS4: Community Health, Safety and Security (2006)
5. PS5: Land Acquisition and Involuntary Resettlement (2006)
6. PS6: Biodiversity Conservation and Sustainable Natural Resource Management (2006)
7. PS7: Indigenous Peoples (2006)
8. PS8: Cultural Heritage (2006)

As an applied social scientist it is easy to understand the nature and scale of tasks to be performed in development projects at national and international arena. Usually, all of these global development partners are seeking international and national consultants to fulfil these tasks and prepare compulsory reports at each stage of the project cycle. Many project reports have to be prepared at the time



of appraisal and designing stage. Hence, it is a task of social scientists to get involve in these tasks along with the Technical Scientists, and play a keyrole in the development process in their own country as well as in the global arena.

Following this realistic approach, these global development partners have influenced and also supported Sri Lanka to adhere to basic policy documents and revise or develop necessary legislative enactments in our country as in other member countries. The best example is the National Involuntary Resettlement Policy (NIRP) adopted in May 2001 after the Cabinet approval on the policy paper submitted by Ministry of Lands (MoL). The NIRP was developed by the MoL under the technical support of ADB. After the approval of the policy, ADB and the WB supported the MOL to conduct awareness of the policy among various technical experts including social scientists.

As a result of these new trends in the local and global context there is a great demand for social scientists in the development sector, today. When we look at the project cycle of a development project, there are many opportunities for social scientists to engage in their roles at different stages.

When focusing on the ADB project cycle following technical (social safeguard) reports there, several reports that are essential for ADB approval of a mega development project in any member country. They include:

1. Resettlement Framework
2. Indigenous People Framework
3. Social Impact Assessment
4. Due Diligence Report (if there is any change of the scope or delay)
5. Resettlement Impact Categorization
6. Indigenous People's Impact Categorization
7. Resettlement Action Plan
8. Indigenous People Plan
9. Summary Poverty Reduction and Social Strategy
10. Gender Action Plan
11. Summary of Risk Assessment and Risk Management Plan

All of these reports are prepared at the time of designing or preparation stage of the project. In addition, there are few more technical reports to be prepared in other stages of the project cycle. It is obvious that all these technical reports need inputs from social scientist/s as well.

Though there are certain trends and demands for social scientists in the

development sector today, in the past the major portion of development planning activities had been led by other scientists. Probably as a result of influence made by hard scientists on the basis of positivistic paradigm or perspective many social scientists had not been engaged in these national and international tasks. However, certain contribution had been given by Economists, but it is again influenced through the positivistic paradigm.

As highlighted above, due to changes that have taken place in the last decade of the 20th Century and beginning of 21st century; today, the platform has widened for other social scientists too. There is a great demand for sociologists, anthropologists, environmental scientists, psychologists, communication specialists, geographers, GIS experts, etc.

For Social Scientists to get engaged in these activities, there is a need to earn and develop an identity in these fields by engaging in development projects and activities. It will enhance our academic and research career if we engage in these fields of expertise. It is reflecting in the requirements of theory testing as

All these landmark events of global development partners show their gradual commitment to safeguard the environment and social requirements while minimizing the risk levels in project implementation.

well as theory building which is more relevance in social epistemology. The most important factor is being self-enthusiastic. A feeling which is an energy towards further engagements.

#### 5. Required Qualities of a Social Scientist

While being engaged in these development activities the social scientist must meet the following qualities in their profession. They are:

1. Target oriented (on the basis of TOR for

the expert given)

2. Empirical based (essential to collect ground information conducting both quantitative and qualitative studies)
3. Sharing with other experts in the team (multi-disciplinary)
4. Team work
5. Deliverable based
6. Matching with the local legal and policy framework
7. Matching with institutional or development partner's policies and country strategies
8. Risk assessment at the level of planning and implementation
9. Lessons learnt (essential to study previous project experiences in similar context)

Unless, these expectations are met, our roles or tasks maybe questioned by other experts mainly who are having a positivistic paradigm and practice. Since, many social scientists are dealing with behavioural aspects of people and the society, it may be hard and a complex task to make certain decisions, because many of these factors are not tangible. All social scientists have to deal with mainly quantitative and qualitative data or information while they are engaged in these specific tasks. People usually have dual role in their social life and it should be understood on the basis of social and cultural context. Social scientists too are working at this atmosphere and it is difficult to abstain from this dual roles.

As illustrated above, engaging in the national context is essential for a new social scientist to gain sufficient experience in development planning, implementation, monitoring and evaluation. Sometime, it may help us to expand our horizons beyond the national perspective. The following examples given here are showing some aspects of roles played by a social scientist in Sri Lanka and other South Asian countries. They are:

#### 6 Social Scientists and Social Problems in the Society

Social problems are a common feature in all modern societies. It is prevailing in all developing countries including Sri Lanka, and is a barrier for development. The modernity has influenced all these countries and it has already made a duality in all aspects of the society and culture. Therefore, social problems are negative aspect of social changes taking place in every society. However, keeping these social problems in the society without solutions, does not allow reaching an advanced level of development. It is a task of social scientists and government institutions to find remedial actions to



minimize negative impacts of social problems. Poverty, drug and alcoholism, suicide, youth unrest, divorce, HIV/AIDS and sexual violence, crime and delinquency are major social problems that can be identified in Sri Lanka. Engaging in research on social problems and to draw the attention of relevant authorities on the current situation is essential. For instance, poverty is a multidimensional social problem that links with other social problems. There are sector wise specifications or differentiations to be explored and these factors are essential to any government institution to deal with poverty reduction. Perhaps, reduction of crime through rehabilitation or correctional methods is more relevant for the Prison Department and all rehabilitation centres of the country. Thus, engaging in research on focused social problems to find out most appropriate remedial action to minimize the impact.

When the society is transforming towards a new order, social issues and problems are inherent features of the social structure. As illustrated above, social scientists should engage in finding remedial actions for these social issues and problems. Advocacy is one method that can be used for people who are suffering from an issue or a social problem. It is a well-accepted argument that advocacy as a process of influencing policymakers to bring about changes at the policy level to advance the cause or the issue identified. Advocacy is speaking up for, or acting on behalf of, yourself or another person. The other person is often receiving a service from a statutory or a voluntary organisation. The process of advocacy helps service users to:

1. Make clear their own views and wishes,
2. Express and present their views effectively and faithfully,
3. Obtaining independent advice and accurate information,
4. Develop self-confidence and self-determination to find a solution,
5. Negotiate and resolve of conflict (internal and external or inter and intra).

It is therefore, implied that a thorough understanding of the social and political environment (including laws, policies, political systems and processes, and cultural practices) around the advocacy issues is essential before engaging in advocacy. Furthermore, counselling is another aspect that can be practised by the social scientists. Though, it is not a popular and demanded field of expertise in Sri Lanka, it is a very vital aspect in developed countries engaged by social scientists, not experts in the medical field. It seems medical experts in Sri Lanka are trying to dominate in

advocacy and counselling fields, while closing doors for social scientists. This is a clear example for the hegemonic behaviour of medical experts. Advocacy and counselling is a major part of sociology and social work and they need to get a professional licence to engage in these tasks. We do not have a well establish social work tradition in Sri Lanka to lead these fields. Advocacy and counselling for drug addicts, youths, married couples, separated and divorced couples, HIV/AIDS infected persons, etc. are highly demanded fields in the current society of Sri Lanka.

### 7. Development Initiatives and the Role for Social Scientists

There are certain social unressts due to certain developmental initiatives in the society that needs proper care and management. It was already highlighted above, under the global development partners. If we design a new expressway, there will be thousands of people who will be affected, irrespective of their age, gender, education, income, ethnicity, etc. Thus, social scientists need to be absorbed to understand their discomforts and find most appropriate solutions to resettle them in a nearest place where do they live without much damage to their existing social network. For this purpose, social scientists must do social impact assessments and a census to identify the magnitude of the impact (and draw attention to the technical reports that need to be produced).

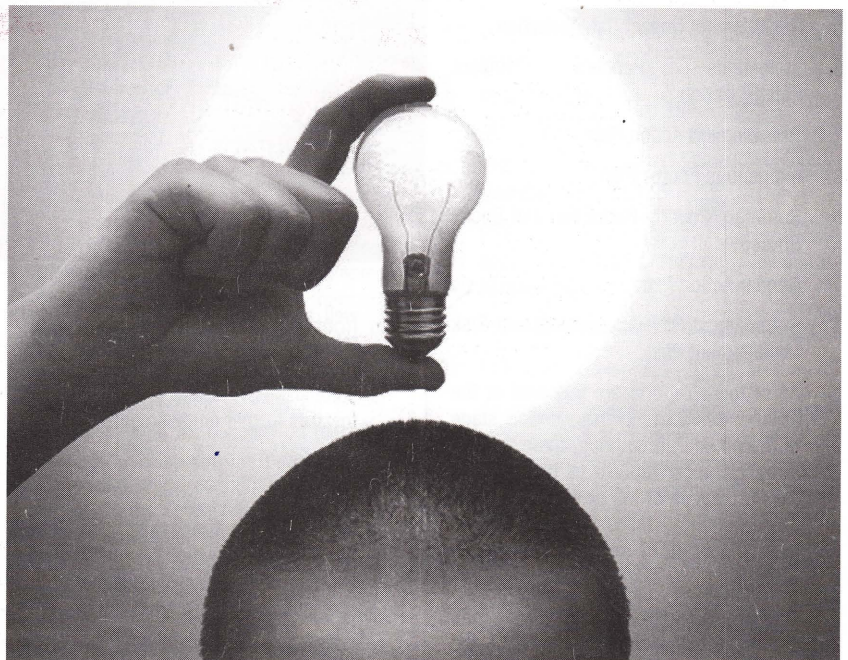
Furthermore, at present techniques using high technology is also used for development planning purposes by social scientists. For example; when they conduct a social impact assessment and a census on project impact on properties and livelihoods, GIS technology can be used for identification of affected

persons as well as their immovable properties. This information can be used for the preparation of resettlement action plans. The best example is the Northern Expressway Project (NEP) in Sri Lanka. The consultant sociologist used GIS technology to produce maps with the road trace and affected persons and their properties. When it is analysed with other social and demographic data it has become a very strong tool for development project planning. The use of GIS in resettlement planning in NEP is the first case in South Asia, perhaps in Asia.

Social impact assessment is a very common activity in social research by social scientists. However, the issue is not having sufficient number of well-trained social scientists to cater for development planning and designing purposes under development projects. There are different kinds of impact assessments as shown below:

1. Social Impact Assessment
2. Environment Impact Assessment
3. Cost-benefit Assessment

Irrespective to the kind of impact assessment, the requirement of social and cultural data is a very essential need. Social scientist needs to focus on quantitative and qualitative data that is relevant to the requirement. It will depend on the magnitude of the proposed project. The impact assessment is highly depending on the technical information developed by engineers and other experts. Thus, conducting impact assessments are very complex without other experts' direct support. For example, when we were planning the greater Galle city development project or the greater Kandy city development





project we had to collaborate with design engineers at the Urban Development Authority, Sri Lanka Low Land Reclamation and Development Board, Coastal Conservation Department, Galle District Secretary, Divisional Secretary of Galle, Galle Heritage Foundation, Archaeological Survey Department, Galle Urban Council, Prison Department, Sri Lanka Navy, Football Federation of Galle, Galle Cricket Ground Board, Galle Chamber of Commerce and other social organisations. All of these stakeholders to Galle city development projects had different views that we collected through a quantitative and qualitative set of data. It is very clear that social scientists can contribute vastly to impact assessment requirements in collaborations with other technical scientists.

### 8. Monitoring and Evaluation and Social Scientists

As highlighted above monitoring and evaluation is an essential part of development projects and it is considered as a separate stage of the project cycle. All aspects related to social, cultural, and environment matters are relevance to social scientists. Development projects implemented by different local organizations/institutions with the support of government and the global development partners need to ensure project impacts and outcomes as per the project goals and objectives. Thus, there are several forms of monitoring and evaluation studies as per the different requirements. These requirements can be listed as follows. They are:

1. Internal monitoring requirements
2. External monitoring requirements
3. Independent monitoring requirements
4. Annual monitoring and assessments
5. Mid-term evaluation
6. End-phase evaluation

It is important to understand that all monitoring and evaluation should be done within Monitoring and Evaluation Framework (MEF) that has been developed at the beginning of the project. The MEF is a part of project designing and it will conduct and compare with the baseline study conducted just before the implementation of the project activities. Thus, baseline study and data is an essential part of the monitoring and evaluation process.

### 9. Policy Formulation

Another critical aspect that the social scientists can engage is policy formulation activities related to the government as well as for global development partners. Usually, governments are prominent users of policy documents in implementation of different services aiming critical

issues. When there is a policy on the matter of concern it is easy to address the issues. In that case, the social scientists can extend their contribution for policy formulation as well as for policy implementation purposes. Many policy requirements are related to social and cultural aspects or domains. However, there are major domains that the social scientists could engage in policy formulation and implementation requirements in any society. For instance; formulation of policies such as family policy, youth policy, migration policy, alcohol and illicit drugs policy, education policy, environment policy, community forestry policy, etc. are the major areas that are highlighted here. At the level of policy implementation the social scientist can play a major role in representing Management Committees for Policy Implementation or Consultative Committees for Policy Implementation. Especially, there is a requirement of formulating an action plan to implement the policy and the social scientists can enhance their contribution for developing action plans for these policies relevant to them.

### 10. Dissemination of Knowledge

Dissemination of knowledge that is produced through various research activities is another essential part of the social scientists service or task. They can acquire this knowledge through practice by engaging in different national and international development projects, policy formulation and implementation, and basic research. Dissemination of technical reports and its facts and figures are usual practice in the field of development. But, generating new knowledge is a separate requirement and interest of social scientists. Social scientists are fundamentally responsible to engage in theory formation or testing related to their specific subject disciplines. If you are a sociologist you have an ample opportunity to use existing theories, concepts, formats, and analytical tools in your engagement in research and consultancy works related to the national and international developments. The reflective or self-reflective thoughts that you are developing within your mind will help in theory formation or testing in your specific field of study.

This is related to sociology of knowledge as well as social epistemology. If you are a functionalist you can see how the social structure is constructed or change as per the different elements or variables that govern by internal and external factors. In this effort you will seek to emphasise how the human society is maintaining social integrity or unity with the system or sub-systems. If you are a conflict theorist, your main interest is to show how the society is changing

towards a new social structure as a result of internal and external factors. Social epistemology is very essential to keep and maintain the subject identity and scholarly identity within the subject.

### 11. Overall impact on the society

What is the impact of engaging in development planning, implementation, monitoring and evaluation activities by a social scientist towards the community or society? It is fivefold.

1. Plan the activity with an empirical base (set of baseline data),
2. Avoid or minimize negative impact towards the community or society,
3. If not avoid or minimize, address all issues related to the project affected persons and uplift their livelihood up to similar level or better level,
4. Bring the change towards the target community (theory of change – commonly understood as Development),
5. Engage in social epistemological task based on your reflective or self-reflective thoughts related to you specific subject discipline.

In addition to these primary impacts, there are many humanitarian grounds to understand while planning development activities and a development program. It is essential to highlight few interesting examples related to mega development projects planned in Sri Lanka.

Frist of all let me focus on the role of a highway design engineer who worked in the STDP. She planned and identified places where hume pipes are needed across the new road to manage the water flow in paddyfields. When she went to lay down it with the field staff in a paddy field somewhere in Pinnaduwa, a farmer came and told her the decided place is inappropriate. The farmer used his indigenous knowledge to show her the best place the pipes should as per gravity flow. But, she rejected the farmers claim and decided to lay down the pipes as she decided. After a rain the entire area got flooded and there were around 2 feet of water in the paddy field damaging the crop. Eventually, we met this farmer in a series of case studies. He told that "how can engineers know better than us who are farming in this paddy field?" it seems that indigenous knowledge is essential for the development and also it is important to follow a participatory approach when planning any development activity. This is what social scientists are called Participatory Rural Appraisal (PRA) or Participatory Learning Exercise (PLE).

There are many similar cases reported in different sectors of development. The following pictures are related to the energy sector in Bangladesh. This power plant is constructed at Nowapara near





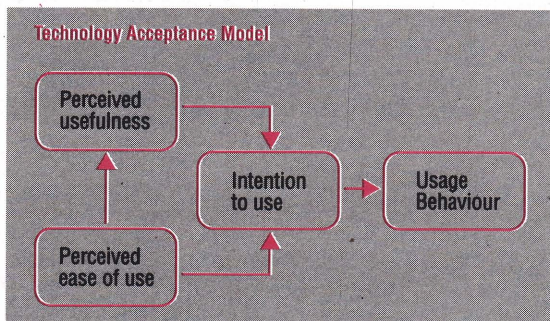


# A PERSPECTIVE FOR INTERNET BANKING

Sandalal Edirisinghe

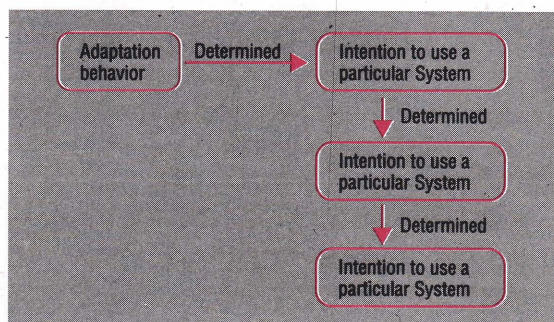
Head of IT  
People's Bank

In order to perform a proper assessment of the current and future trends of Internet, mobile, SMS and ATM Banking, the survey should adopt suitable models to understand the link between Technology and bank customers. Once the link is clearly understood, characteristics or variables that govern the relationship need to be defined to scope the survey questionnaire.



The Technology Acceptance Model (TAM) by Fred Davis 1989

The technology acceptance model was established in 1989 by Fred Davis and is still the best known model used to understand the adaptation of technology by any user. The analysis performed using this model is depicted below.



## Perceived usefulness and Perceived ease of use

Perceived usefulness is defined as, using a particular system will have an improvement on performance. Perceived ease of use is defined as, using a particular system will be free of effort.

In terms of banking related services, the Perceived ease of use mainly depends on

1. Accessibility
2. Cost
3. Privacy Protection
4. Security

The perceived usefulness a system depends on

1. Attitude
2. Trust
3. Awareness

The primary objective of the survey should then be to assess the following areas:

1. **Availability of the technology required to access the services**
  - a. This could be achieved through a study of the current Telecom, mobile service provider and CDMA provider penetration and internet services penetration statistics.
  - b. Information with regard to the mobile handset types that could be obtained through the mobile service providers. Once this information is obtained and mapped based on a district level; the survey can be focused in to areas where the availability of the required technology is high. This will set the basis for the research and distribution of the survey.

## Qualitative aspects

- c. It is most likely that areas of high technology penetration will have the least resistance by people to adopt new technologies.
  - d. The trust factor towards technology will be high.
  - e. Awareness would be the only factor that will need to be assessed to understand the behavioral patterns.
2. **Cost of the services**  
In order to understand how monetary values could affect the customer behavior, it is crucial to understand the expenditure patterns of customers. This could be achieved by understanding the following:
    1. Typical value of a Mobile top up (or Reload).
    2. The most associated data package for mobile users.
    3. The average distance for a customer to the nearest ATM or Bank.
  3. **Privacy and Security**  
The need for Privacy and Security is governed mostly by the Banking Regulations. Customer should only be aware of such regulations and how the service adheres to such regulations.



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