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Editors: Tomorrow People Organization
Dušana Vukasovića 73
11070 Belgrade, Serbia

Secretary: Vladimir Ilić

Scientific committee: Mr. Dennis Stuebing
Ms. Sarah Nikita
Dr. J. Alejandro Tirado-Alcaraz
Prof. Chamhuri Siwar
Mr. Shihan Fernando

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ANALYSIS ON MINIMUM WAGE IMPACTS ON INDONESIA LABOR MARKET

Noviandri Nurlaili Khairina

Candidates of Master in Public Policy Lee Kuan Yew School of Public Policy,

National University of Singapore

Indonesia has sustained over a decade of economic growth and growth in wages and aspires to become a high economy country by 2030. To achieve this goal, ensuring economic growth and job creation becomes really important, with addition to ensuring increase of overall society. The most prominent policy in Indonesia's labor market intervention is minimum wage policy, which has been implemented for more than four decades. The policy aims to ensure that every worker fulfill their right to earn a living that is decent from the viewpoint of humanity. Minimum wage standards increase overtime and this paper is going to evaluate its effectiveness. The result shows that although the policy success to raise the nominal minimal wage to adjust the increasing standard of living, there are other impacts to economy in general. Also, some problems exist in the implementation. Further improvement and a more comprehensive and integrated social protection policy thus needed to complement the current minimum wage system.

1. Introduction

Indonesia has sustained over a decade of economic growth and growth in wages. Indonesia aspires to continually generate prosperity, avoid a middle-income trap and leave no one behind to become a high-income country and one of the largest economies in the world by 2030. This is indeed an ambitious goal. Realizing them requires sustained high growth and job creation, as well as reduced inequality.

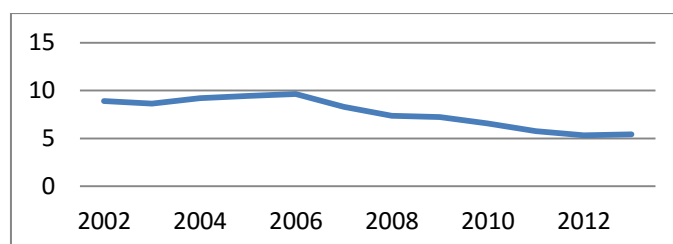
Minimum wage is one of the most used instruments for affecting the wage inequality on the labor market. Most countries, both developed and developing, set the level of a legal minimum wages either by legal force or setting collective agreements negotiated between employers and trade unions. Indonesia has implemented minimum wage policy for years and the nominal standard is increasing overtime.

2. Context: Labor Market in Indonesia

2.1.Data and Growth

The country's economic development showed stable conditions. After experiencing recession and stagnation that caused the slowdown of economy in 1998 with the growth rate of economy being negative 13.1%, it then improved in 1999 and further improved until recently with several shocks including 2005 fuel price increase and global financial crisis in 2008. Indonesia was also notable for being one of the few countries who able to have positive economic growth during 2008 financial crises. In general, after Asian Financial Crisis period, the employment and wage level improves and unemployment level is decreasing.

Figure 1. Indonesia Unemployment Rate 2001-2013



Sources: World Bank Development Indicators, Illustrated

Table 1. Key Labor Market Indicators, 2011-2014

| Variable | 2011 | 2012 | 2013 | 2014 |
|--|---------|---------|---------|---------|
| Employment (millions) | 108.2 | 113.0 | 112.8 | 114.6 |
| Regular employees (millions) | 37.8 | 40.9 | 41.1 | 42.4 |
| Casual employees (millions) | 11.1 | 11.7 | 11.3 | 11.5 |
| Simple average minimum wage (IDR thousands) ¹ | 988.8 | 1,088.9 | 1,288.4 | 1,494.1 |
| Average wage for employees (IDR thousands) | 1,552.5 | 1,636.0 | 1,917.2 | 1,925.6 |
| GDP (constant 2000 prices, trillions) | 2,456.7 | 2,618.9 | 2,770.3 | NA |
| GDP per employed person ² | 22.7 | 23.2 | 24.6 | NA |

Source: BPS (2014) Laborer situation August 2014, Badan Pusat Statistik in ILO (2015)¹

With such economic achievements, employment creation is still limited and not considerable enough to overcome the unemployment problem, indicating the competitive

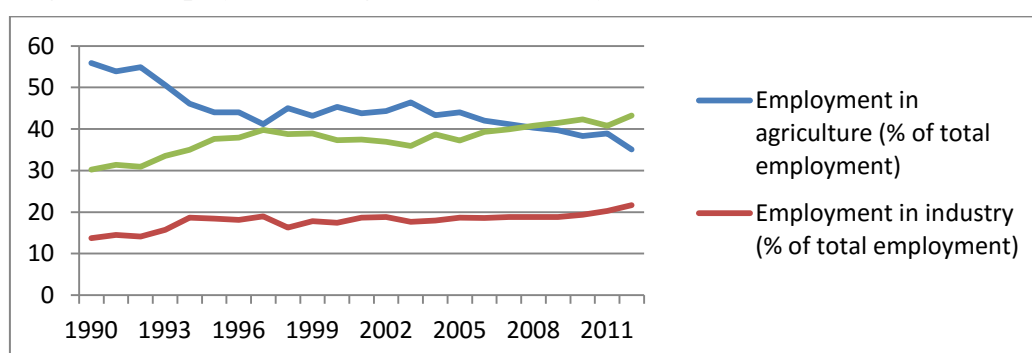
¹ ILO. "Indonesia: Trends in wages and productivity January 2015". (2015)

market for jobs. Resembling to the increase of population, the labor force also increased from 71.7 million in 1990 to 122.1 million in 2013. Looking further to the supply side, women's labor force participation rate remains constant at around 38%. Labor force growth was accompanied by significant changes by the industrial (sectoral) structure in economy. This is an indication of the structural transformation that accompanied rapid industrialization.

2.2. Sectoral Employment

Economic crisis and globalization of economic activity led to important shifts in the industrial and occupational composition of employment in the last two decades. Between 1990-2013, employment in agriculture decrease and significant increase incurred in service sector employment. Service sectors even lead in terms of employment level in the recent years, beating the formerly prominent agriculture sector. While industrial sector's employment level relatively constant, we can say that majority of the worker shifts to service sector.

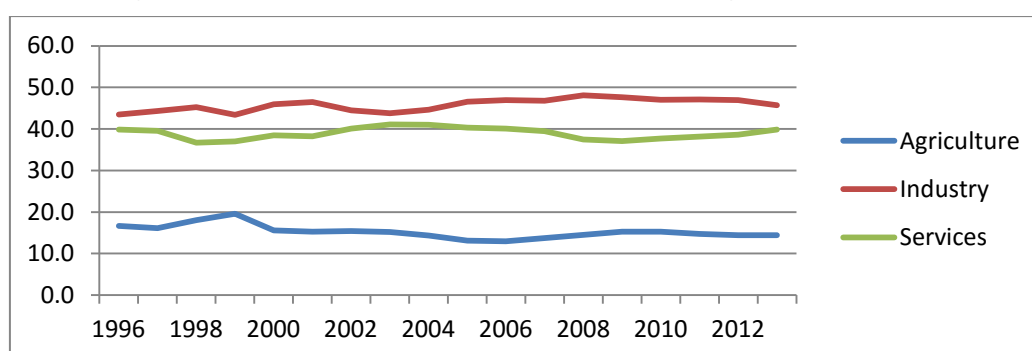
Figure 2. Employment in Agriculture, Industry, and Service Sector 1990-2013



Sources: World Bank Development Indicators, Illustrated

Despite having the highest employment share, service sector is not the leading sector based on GDP share. Industrial sector, in contrast, having the highest share indicating really high sectoral productivity compared to the others sector. Reflecting to previous figure of number of employment in service sector (almost 50% of total employment), we can conclude that large proportion of Indonesian worker has relatively low productivity level.

Figure 3. Percent of GDP based on Industrial Origin, 1996-2013



Sources: Asian Development Banks, Illustrated

One notable feature of Indonesia labor market is the high percentage of informal sector employment. Informal economy, which includes the firms, workers, output, and production activities conducted by firms that are unregistered and do not pay taxes, accounts for a significant and growing portion of total economic activity. According to Central Bureau of

Statistics, 68% of Indonesia's worker was employed in informal economy in 2009.² This huge percentage of informal economy should be major concern in labor issues because government has certain limitation in providing benefits and crediting taxes from them.

3. Policy Review: Minimum Wage

3.1. Policy Objective

Minimum wage supporters often argue that raising the minimum wage is an effective instrument for reducing poverty. With a high minimum wage, poor workers would be guaranteed of their purchasing power so that they will be able to meet the needs of decent living standards.

Minimum wage policy was introduced in 1956 and became the key instrument for national labor regulations. Starting from 1969, each province has their own National Wage Council, which consisted of government, employers, and trade unions representatives. Therefore, until this time, minimum wage is differs across provinces. This policy was not implemented properly in the early years, until around 1980s Indonesian Government received many international pressures (notably from AFL-CIO) for violating the labor rights by not providing the proper working environment and paying wages at a very low standards.³

Minimum Wage is regulated on Article 89 of Indonesia Manpower Act No 13, 2003. The objective of this policy is to ensure that every worker fulfill their right to earn a living that is decent from the viewpoint of humanity. It also aligned with the objective of national development mentioned in Article 27 subsection 2 of 1945 Constitution of The Republic of Indonesia: Every citizen shall have the right to work and to earn a humane livelihood. In general, minimum wage policy is believed to protect the worker and set a certain standard of welfare Indonesian society. Minimum wage is consisted of basic salary including fixed allowances, as regulated in Regulation of the Minister of Manpower and Transmigration No. 1 year 1999.

3.2. Analysis

The monthly minimum wages in Indonesia varies from Rp 1,250,000 (~125 SGD) in East Nusa Tenggara province to Rp 2,700,000 (~270 SGD) in DKI Jakarta. This part of the paper will analyze whether the minimum wage policy is sufficient to ensure workers in Indonesia.

² Rothenberg, Alexander, Nicholas Burger, Charina Chazali, Arya Gaduh, Indrasari Tjandraningsih, Rini Radikun, Cole Sutera, and Sarah Weiland. "Rethinking Indonesia's Informal Sector." (2015)

³ (Gall, 1998 dan Suryahadi dkk 2003) in Kistanto, Ilham. "Analisis Penetapan Upah Minimum di Kabupaten Jember." (2013)

Table 2. Minimum Wage & Minimum Decent Living Standards in Indonesia, 2015

| Provinsi | Minimum Wage | Minimum Decent Living |
|--------------------|--------------|-----------------------|
| | IDR | IDR |
| Kalimantan Tengah | 1,896,367 | 2,254,000 |
| Kalimantan Barat | 1,560,000 | 1,504,000 |
| Jambi | 1,710,000 | 1,708,174 |
| Sulawesi Tenggara | 1,652,000 | 1,621,741 |
| Sumatra Barat | 1,615,000 | 1,474,227 |
| Bangka Belitung | 2,100,000 | 2,082,000 |
| Papua | 2,193,000 | 2,171,944 |
| Bengkulu | 1,500,000 | 1,499,826 |
| Nusa Tenggara B. | 1,330,000 | 1,430,064 |
| Nusa Tenggara T. | 1,250,000 | 1,652,137 |
| Banten | 1,600,000 | 1,403,556 |
| Kalimantan Selatan | 1,870,000 | 1,691,000 |
| DKI Jakarta | 2,700,000 | 2,538,174 |
| Riau | 1,878,000 | 1,872,000 |
| Kepulauan Riau | 1,954,000 | 1,902,598 |
| Bali | 1,621,172 | 1,612,818 |
| Sumatra Utara | 1,625,000 | 1,271,058 |
| Kalimantan Timur | 2,026,126 | 2,026,126 |
| Aceh | 1,900,000 | 1,732,413 |
| Lampung | 1,581,000 | 1,442,898 |
| Sulawesi Tengah | 1,500,000 | 1,499,791 |
| Maluku | 1,650,000 | 2,197,450 |
| Maluku Utara | 1,577,617 | 2,333,166 |
| Sumatra Selatan | 1,974,346 | 1,974,346 |
| Gorontalo | 1,600,000 | 1,864,379 |
| Sulawesi Selatan | 2,000,000 | 1,950,000 |
| Papua Barat | 2,015,000 | 2,255,000 |
| Sulawesi Utara | 2,150,000 | 1,641,969 |
| Sulawesi Barat | 1,655,500 | 1,981,507 |
| Average | 1,782,211 | 1,813,391 |

Source: BPS (2014) Laborer situation in Indonesia: August 2014, Badan Pusat Statistik, from Investment-Indonesia (2015)⁴

a. Actual Outcomes

Although have been implemented for years, whether minimum wage policy is successful to meet the policy's objectives remains questionable since there are large number of workers who actually paid below the minimum wage level and implying that these worker might not able to meet the decent standard of living.⁵ Data from the Indonesian Ministry of Manpower and Transmigration in 2012 shows that the number of

⁴ Indonesia-investment. "Berapa Upah Minimum di Indonesia Tahun 2015?". Accessed November 6, 2015. <http://www.indonesia-investments.com/id/berita/berita-hari-ini/berapa-upah-minimum-di-indonesia-di-tahun-2015/item2633>

⁵ Gajimu.com. "Jenis Pekerjaan Yang Pengerjanya Digaji Dibawah UMP". Accessed 7 November 2015. http://www.gajimu.com/main/gaji/copy_of_kampanye-upah-minimum/pelanggaran-ump

workers who earned wages above the minimum wage was only 37% of the total workers in Indonesia, implying the rest earned at minimum wage level or below⁶. ILO (2015) reports that one-third of regular employees in Indonesia are paid around Rp 950,000 (~95 SGD) or way lower than the average minimum wage which is Rp 1,490,000 (~150 SGD). This is indeed lower than average minimum decent living standard which is Rp 2,250,000 (225SGD). These low-wage workers tend to be disproportionately female, with this trend likely reflecting the increasing number of women shifting out of unpaid family work onto part-time contract work as an employee.⁷

Large proportion of labor worked in informal sectors is the first reason for this condition. As mentioned earlier, large proportion of Indonesia works at informal sector and enforcement of this law in these sectors is difficult.

The second reason is the lack of enforcement in the implementation. Although in the labor law employers who violate minimum wage provisions were threatened with criminal sanctions, the implementation in reality often does not match the expectations. The other forms of violation is by combining overtime payment and transport allowance with basic salary and benefits so that the total wages reported to be in accordance with the minimum wage. Yet, further investigation is absent. Lack of knowledge of law enforcement (which is supposed to be the labor union's role) and lack of supervision from the authorities are important factors for this problem. As the result, worker who compete to secure a job in the tight-labor-market just accept whatever they get as their salary.

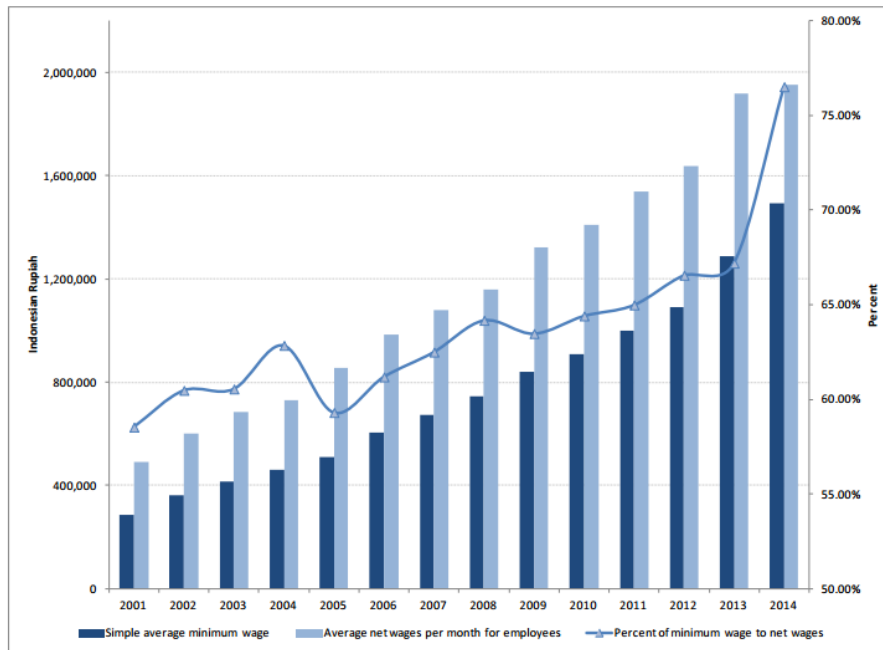
b. Other Impacts

Minimum wage policy also brought positive impact to overall society, such as decreasing the income inequality. While the minimum wage increased noticeably between 2012 and 2014, it actually minimizes the gap between average minimum wage and average wage in general for regular employees. The simple average minimum wage was 58.5 percent of the average wage for regular employees in 2001 and by August 2014 this ratio had increased to 76.5 percent.

⁶ Santoso, B., and K. H. Hassan. "Enforcing Minimum Wage Through Criminal Sanctions: A Case of Indonesia." *Labour Law Research & GreDTiSS* (2013).

⁷ ILO. "Indonesia: Trends in wages and productivity January 2015". (2015)

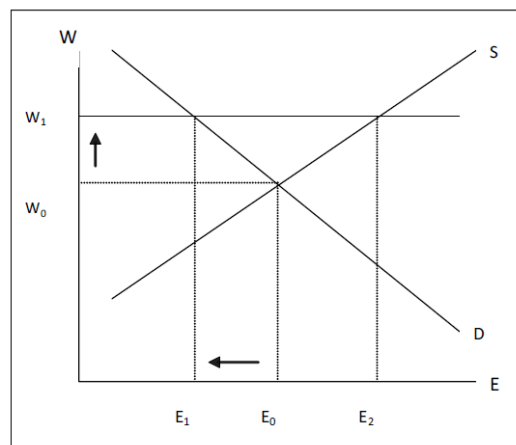
Figure 4. Trends in minimum and average wages for Indonesia, 2001-2014



Source: BPS (2014) Laborer situation in Indonesia: August 2014, Badan Pusat Statistik, in ILO (2015)

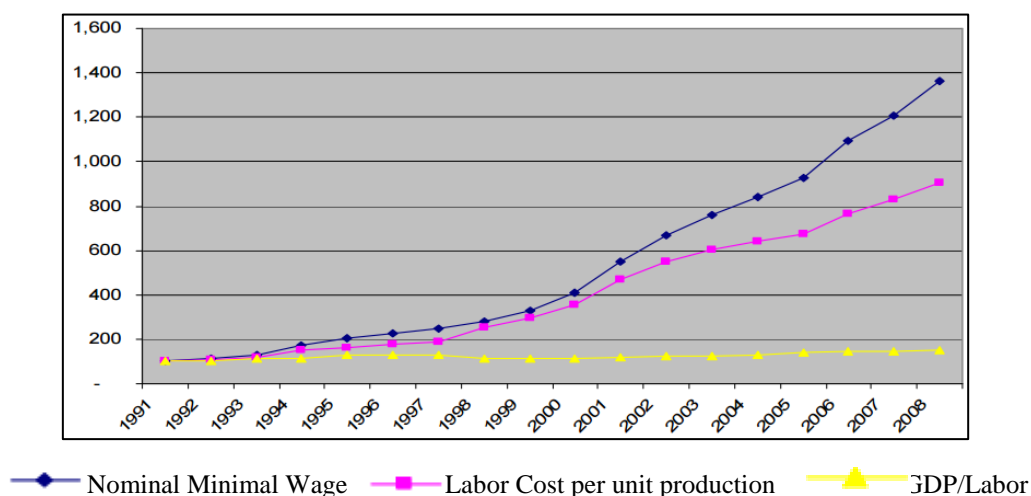
However, there're also some negative impacts of this policy. As we know, minimum wage policy could reduce the total employment. Different with Singapore's case, foreign worker existence in the labor market doesn't change the minimum-wage impacts on local employment because foreign worker employed at high-salary jobs. Therefore potential employment without the minimum wage policy could be higher than the actual number.

Figure 5. Impact of Minimum Wage on Competitive Market



Although the policy had been in place for years, the minimum wage standard is increased overtime. From 1991-2008, labor cost per unit and the minimum wage increase significantly while the labor productivity is barely grow overtime.

Figure 3. Minimum Wage Index, Labor Productivity, and Labor Cost per Unit Production 1991 – 2008 (1991 =100)



Source: World Bank, from (Friawan, Deni, and Carlos Mangunsong)⁸

Furthermore, the minimum wage setting process is also problematic which can encourage firms to replace labor by capital when they make their investment/ expansion decisions. Negotiations and final agreements take place at the province and sectoral level, making communication and compliance with new formula-based adjustments is difficult. Generally, ensuring the compliance of firms and employers to minimum wage regulations is not easy, and requires complex monitoring and coordination at the central level, between the Ministry of Manpower and relevant ministries for effective implementation, as well as between central and local governments and relevant actors (District Governors and Wage Councils).

The current minimum wage policy also create certain business uncertainty, as the minimum wage standard is reviewed (and could change) every year. Moreover, during the process labor strike activities often involved and would affect the production activities.⁹ Also, the current system of minimum wage could enlarge regional disparity and affect the urbanization trend. As the wage level varies across provinces, job-seekers often decide to move to other regions in order to get higher earning.¹⁰

4. Conclusions and Recommendations

4.1. Key Points

Objective of the policy discussed in this paper is to ensure that every worker is able to afford decent standard of living and improving overall society's welfare. The nominal minimal wage increases over time but unfortunately was not followed by significant improvement in productivity. However, the impact of the policy it selves remains questionable as it had several limitations and challenges in implementation.

Indonesia has a typical complex labor market for developing countries given the large share of employment in informal economy, therefore implementation on minimum wage in this area is challenging. Lack of monitoring and legal enforcement also often leads violation

⁸ Friawan, Deni, and Carlos Mangunsong. "Globalisasi, Pertumbuhan, dan Disadvantaged Labours di Indonesia: Analisa dan Implikasi Kebijakan."

⁹ Dunkel, G. "Massive struggle to raise minimum wage in Indonesia". Accessed November 6, 2015. <http://www.workers.org/articles/2015/01/10/massive-struggle-to-raise-minimum-wage-in-indonesia/>

¹⁰ The World Bank. "Development Policy Review 2014 Indonesia: Avoiding The Trap". Jakarta (2014)

of the rule and therefore needs to be improved. Government also needs to come up with other policies to overcome the impacts of minimum wage implementation.

4.2. Possible Policy Alternatives (or Complementary)

Realizing the limitation and impacts of minimum wage implementation, Government needs to come with other policies which could be a substitute or complementary of minimum wage. Setting the minimum wage is one way to protect the low-paid worker, but there are other aspects that should be complemented, such as housing, health insurance, worker benefits, and other social protection measures.

Indonesia has just recently implemented their national social security system (SJSN) in 2014. The universal coverage for worker is even just started gradually this year and targeted to fully operate by 2019. In the start of implementation, only 17% of population was covered by employment-linked system of contributory social insurance. The other 30% was covered by government only for health benefits.¹¹ The rest was not covered at all, remains vulnerable to from economy, environment, or social shocks. Under this system, every citizen of Indonesia and foreigner who resides for more than 6 months is entitled to health benefit with the exchange of small amount compulsory monthly premium. Worker benefits, given based on voluntary contribution, include occupational accidents benefit, old age savings, and death benefits. Given it just recently implemented, we can't evaluate whether this policy is effective to create social protection net for the worker. Nevertheless, this system only protects health and worker benefit and missing the housing aspect.

One of downside of minimum wage is because it put additional burden to employer in term of cost, which led to violation of the rules by some firms. Government should provide some incentives so the economic burden is lower and the implementation rate is high. Possible mechanism is by providing subsidy for infant entrepreneurs or micro industry so that it would top up the wage paid by employer or providing tax benefits for the firms. In another way, it could also increase government's tax revenue once the firms registered.

4.3. Recommendations

a. Improving monitoring and enforcement mechanism in minimum wage implementation.

Also, it is important to encourage labor union participation in the process to ensure that larger group of worker benefited from this policy. Government also needs to adopt other punishment for the violations, since sanction punishment is contra-productive to economy. Government could require the employer to compensate the workers by paying them the difference between the paid wage and the minimum wage. The compensation system should provide a full reimbursement to the worker, even for the loss of purchasing power due to inflation over the years. In another side, Government shall also give incentive to employers who obediently follow the regulation, for example by providing tax benefit or priority for business-credit facilities.

b. Improving the employment quality in informal sectors and low-wage jobs

Considering the large portion of people working in low-wage jobs that have non-standardized work arrangements, focus needs to be given more to address the challenge of employment quality in this area.

¹¹ ILO. "Informal economy in Indonesia". Accessed 5 November 2015. <http://www.ilo.org/jakarta/areasofwork/informal-economy/lang-en/index.htm>

c. Established the more comprehensive and integrated social protection system

To ensure that certain standard of living is achievable, it is almost impossible for government to fully rely on the minimum wage policy. Government need to equip this policy with other protection intervention with a better integrated measures so low-wage earner are still able to live in decent condition.

d. Measures to increase overall productivity in economy

To ensure economic gain in economy, government need to concern about the employer concern as well; the issue of relatively-stagnant labor productivity level. It is important that gains in labor productivity are shared between workers and employers. It could be done by implementing several mechanisms such as providing wage subsidy in wage increases, improving working conditions, introducing working flexibility mechanism and/or investment in human resources.

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Analyzing the Role of Poor and Developing Nations in Global Climate Agreements

Landon Stevens

Strata Policy, Logan, Utah, USA

and

Arthur Wardle

Utah State University, Logan, Utah, USA
Strata Policy

ABSTRACT:

Increasingly, countries are gathering to address concerns surrounding climate change. The 2015 United Nations Conference of Parties, COP21, saw the emergence of a landmark agreement for collective global action. The tagline arising from this agreement was "Long live the planet. Long live humanity. Long live life itself." Indeed, this agreement should positively benefit the planet, but comes with myriad costs associated with such efforts. Just how these agreements are funded, managed, and regulated are crucial to understanding the broader impacts on individual parties. This paper evaluates the impacts of trade-offs made when considering long-term climate goals over short-term well-being for individual nations and citizens. The paper identifies considerations for officials in countries facing issues associated with energy poverty when crafting global climate agreements (GCAs). The primary question this paper asks is: "What role, if any, should poorer nations play in global climate agreements?" After reviewing the status of global CO₂ emissions and the efficacy of GCAs, we argue that involving developing countries in GCAs is not beneficial in accomplishing global CO₂ mitigation goals. In fact, when low-income countries are party to GCAs their role is either purely symbolic or works counter to other development goals.

Introduction

For the last 35 years the discussion of human impact on the planet and its climate has taken center stage at numerous global summits as leaders have decided that global collective action is needed to avoid the projected negative impacts of climate change. Acknowledged by scientists to be a concerning threat as early as 1979, the United Nations began organizing to take action on the issue and has since held summits in locales like Kyoto, Copenhagen, Cancún, Rio de Janeiro, and most recently Paris (Gupta, 2014). Despite the emergence of climate change as a major political priority among citizens in most developed nations, finding enough common ground to reach a consensus agreement among world leaders has proven to be elusive.

The most recent agreement formed by the UN Conference of Parties at the World Climate Change Conference (COP21) in December, 2015 has been hailed as a landmark success by many. As Reuters (2015) reported, U.S. Secretary of State John Kerry said of the final agreement:

“This is a tremendous victory for all of our citizens, not for any one country, or any one bloc, but for everybody here who has worked so hard to bring this across the finish line. It is a victory for all of the planet and for future generations. We have set a course here. The world has come together around an agreement that will empower us to chart a new path for our planet, a smart and responsible path, a sustainable path.”

European Commission President Jean-Claude Juncker agreed adding, “This robust agreement will steer the world towards a global clean energy transition.” Unfortunately, even some of its strongest supporters have lamented its perceived shortcomings, with U.S. President Barack Obama noting, “...no agreement is perfect, including this one. Even if all the targets set in Paris are met, we’ll only be part of the way there...” (Reuters, 2015). This lack of a ‘perfect’ outcome has been decried in many circles, with the use of inefficient economic tools like subsidies, non-binding voluntary agreements, and political appeasement of various interest groups cited as key weaknesses (Michaelowa, 1998). According to Brennan (2009), various experts viewing the issue through different lenses misjudge the complex nature of reaching effective agreements. For some the issue is purely scientific, others view it as a moral problem, and additional actors see it as an economic exercise. This is all before the overarching difficulty of reaching political consensus by nearly 200 world leaders is factored in.

Nowhere has this political difficulty been more apparent than when discussing unique positions held by industrialized nations, developing nations in the midst of drastic economic growth, and non-developed nations. Identifying and understanding the issues of these various players and the associated expectations attached to any eventual agreement is essential for acknowledging the very different set of circumstances each nation finds itself in when deciding on climate action. Today the question is not whether something needs to be done--the scientific community has converged around agreement on that point--instead, the discussion has evolved to include a new set of criteria. These new questions ask things such as: just how much should be done? Who should be responsible to do it? Who will pay for it? How will anything be paid for? And how will such actions be implemented, monitored, and enforced?

Although general scientific consensus has been reached recognizing that the Earth's climate is changing and that there will necessarily be physical implications without taking some form of action, the projections on the more complex social and human impacts of this issue are highly contested and used frequently as a political wedge in broader discussions (Salehyan & Hendrix, 2010). While global mitigation efforts are planned and implemented through these global climate agreements (GCAs), what seems to be neglected in the grander discussion is "what is the greatest good deliverable by collective action for non-developed nations?" In the case of the Paris accord, a proposed pool of aid set aside by industrialized nations totaling \$100 billion dollars per year has been earmarked to provide "meaningful mitigation actions and transparency on implementation" for developing nations (United Nations, 2015). This annual sum will no doubt produce some form of beneficial return for both individual nations and the global community in both the short and long-term, but this Paris agreement (and inevitable subsequent GCAs) should be closely scrutinized and evaluated beyond its traditional narrow scope of climate action lowering CO₂ emissions.

Methodology

This paper examines the existing research and literature to build on the discussion of just what considerations, if any, must be made by each country at various stages of development when negotiating global climate agreements. To begin, the paper will look briefly at the most recent global climate agreement forged in Paris and what it means for its signatories in the context of past efforts for global climate action. We will discuss the goals and challenges of this agreement and how climate politics have historically impacted attempts for collective action. Next, we will offer a brief review of theories regarding economic development to identify traits of nations at various stages of growth that impact the larger climate discussion. The paper will also look at the current state of global CO₂ emissions along with cumulative emissions since the 19th century. We then proceed to evaluate the nexus between energy production and economic development in various types of economies to identify unique challenges related to balancing growth and well-being with CO₂ mitigation in developing and undeveloped nations. Finally, we aim to combine these variables to illustrate the complexity of development, the role of energy production in that process, the economic constraints that challenge developing nations, and the political considerations that must be totalled by policy makers when balancing global environmental health in the future with domestic economic and human development today.

By looking primarily at the situation of low-income nations and their incentives in pursuing various models of economic growth we can try to determine what variables should be considered by policy makers in this process. In combining the literature on developing nations, economic growth, and environmental status and improvement, this paper will contribute to a more holistic debate of the many issues and challenges developing nations face when they come to the table to negotiate GCAs.

Specifically, we ask: "What role, if any, should low-income nations play in these global climate agreements?" As a follow-up, it should also be asked: "What actions should developed nations take in aiding mitigation or adaptation efforts of poorer nations in the short and long-term?" Finally, we consider: "Of the whole spectrum of possible climate action, which individual efforts would lead to the greatest overall climate benefit?"

By sincerely evaluating the unique considerations of each nation traditionally party to GCAs and doing so through the lens of historic economic development, climate reality, future growth, and fairness--understanding the primary goal of developing nations is poverty alleviation and human well-being--we can identify additional criteria that should be included in any GCA aiming to be more than a symbolic gesture of collective action.

Climate Summits and the Paris Agreement

Since the creation of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, world leaders have repeatedly gathered in an attempt to collectively address the “urgent and potentially irreversible threat to human societies and the planet...” that is climate change. From the first meeting in New York, to successive summits in Kyoto, Copenhagen, Cancún, and Rio, the goal has been to find collective ways to limit anthropogenic greenhouse gas emissions. While valiant efforts have been made to achieve legally binding agreements that can lead to meaningful emissions cuts, success has been elusive. Even the most promising climate action to date, the Kyoto Protocol, has been deemed ineffective due to lack of enforcement, different mitigation burdens for each country, lack of unanimous consent, and domestic political processes limiting ratification (Werksman, 2011).

On December 12, 2015 world leaders finalized a climate agreement at the 21st annual Conference of Parties (COP21) in Paris, France. The treaty, crafted by 195 nations, including countries responsible for over 90 percent of global emissions, agrees to limit global temperature increases to below 2 degrees celsius, while urging action towards a more ambitious goal of 1.5 degrees celsius. All parties to the treaty will establish “nationally determined contributions” outlining their individual goals for limiting CO₂ emissions to be resubmitted and strengthened every five years.

The two overarching goals of the Paris agreement are for “global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country parties, and undertaking rapid reductions thereafter in accordance with best available science [...] in the context of sustainable development and efforts to eradicate poverty” (United Nations, 2015). To aid in accomplishing these goals, developed countries have agreed to continue funding the mitigation and adaptation efforts of developing nations to the tune of \$100 billion per year from 2020-2025, and at least that much in years following. At COP21, U.S. Secretary of State John Kerry pledged that U.S. contributions to such a fund would reach \$800 million dollars by 2020 (Center for Climate and Energy Solutions, 2015). The challenge of meeting the \$100 billion goal is obvious when the U.S. has produced 27% of cumulative CO₂ emissions since 1850 (Ge, Friedrich, & Damassa, 2014), 16% of global emissions in 2013 alone (Olivier, Jansses-Maenhout, Mutean, & Peters, 2013), and 22.5% of world GDP in 2014 (Perry, 2015), and yet is only willing to pledge 0.8% of the total funds outlined in the Paris treaty.

The language scattered throughout the agreement clearly acknowledges the existence of differences between nations in both economic status and their ability to act or comply. Frequently termed “differentiation,” supporters of the COP21 treaty point out that this is the first time that a climate accord has opted to not implement such categorical labels on economic development of participating countries. At the first gathering of the UNFCCC it was acknowledged that national participation should be “in accordance with their common

but differentiated responsibilities and respective capabilities and their social and economic conditions.” The framework thus established labels of “Annex I” or “Non-Annex I” for its participants, that is, developed or developing (United Nations, 1992). The Paris accord takes a more nuanced approach towards differentiation by setting a framework of commitments for all parties with flexibility in compliance options.

It is here that climate deals tend to reach a stalemate. Just who should be responsible for past accumulations of CO₂? Who should be responsible for current CO₂ emissions? What sort of development ‘window’ should be offered to currently and future developing nations? Also how should the ‘leakage’ of emissions, or those shifted from a developed nation to a developing one to avoid domestic emissions, be counted? All of these are important, complex, and sensitive topics that must effectively be breached in any negotiation. Nearly 70% of historic emissions have come from developed countries and 23% of global emissions annually are now traded in the form of exports from primarily low-income nations (Wei et al., 2012).

There are other details in the Paris treaty which do not directly add to our conversation here, and, in fact, the final form and structure of putting this into practice will be agreed upon in further negotiations following the signing of this accord by at least 55 countries who represent at least 55% of global emissions. The current vagueness of language accompanying many of the essential portions of the agreement, the lack of hard targets and definitive accountability, along with concessions for differentiation, have left many on both sides of the discussion worried that the agreement will be ineffective, or worse, a net loss for the planet. For instance, a group of 12 leading climate scientists sent a letter to a British Newspaper publicly venting their frustrations that environmentally, the treaty has no chance of succeeding. A section of this letter read:

“More ominously, these inadequate targets require mankind to do something much more than cut emissions with a glorious renewable technology programme that will exceed any other past human endeavour. They also require carbon to be sucked out the air. The favoured method is to out-compete the fossil fuel industry by providing biomass for power stations. This involves rapidly growing trees and grasses faster than nature has ever done on land we don’t have, then burning it in power stations that will capture and compress the CO₂ using an infrastructure we don’t have and with technology that won’t work on the scale we need and to finally store it in places we can’t find. To maintain the good news agenda, all of this was omitted from the agreement.” (Bawden, 2016)

Despite all of the questions surrounding the Paris agreement, what is clear is that no country is given a complete pass. All must do what they can, and those with little to offer will receive help in the form of financial, technological, and human capital. There is little mention of historic contributions to CO₂ levels by developing nations. Without addressing this precarious divide between the haves and have-nots, it may be that simple words in a non-legally binding agreement may have little absolute value for the poorest nations around the globe and stand a very real chance of doing more absolute harm than good. To get to that discussion, however, it is necessary to look at the nature of growth among nations in various contexts.

The History of Economic Growth and CO₂ Emissions

In his address to the 66th General Assembly of the United Nations in 2011, Secretary-General Ban Ki Moon made an ambitious statement to the world:

“Saving our planet, lifting people out of poverty, advancing economic growth ... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Solutions to one problem must be solutions for all.” (Moon, 2011)

The difficulty of conquering even one of these three priorities at a national level has proven elusive for a majority of the planet. To simultaneously and successfully address all three seems nearly, if not completely, impossible. A closer look at the history of economic development alone illuminates just how we have arrived at our current state of inequality in the world. Sadly, there is no clearly defined roadmap, no outline, no rulebook that a developing nation can reference to guarantee successful growth moving forward. For decades the world's leading thinkers have sought to clearly define what it means to be a “developed” nation versus a “developing” one. They have tried to neatly label societies as “first world” or “third world”, “core” or “periphery”, even “north” or “south” in an attempt to determine how some countries have successfully built a robust economy capable of lifting their people out of poverty and into prosperity while others have not.

Various economic thinkers have presented theories of economic development. From Karl Marx and his treatise “Das Kapital” came the class based theory of growth that a society progresses from primitive communism to slavery, followed by feudalism, capitalism, and a conflict based return to socialism (Marx, 1906). Rostow also presents a stage based theory of development centered around capital that has been criticized as too simplistic for ignoring the realities of institutions, cultural traits, political dynamics, social structures, and geographical peculiarities in impacting a national growth trajectory (Rostow, 1960). While his five stage model has proven useful in some ways to order the chaos of economic development, his approach is seen as a political rebuttal to communism during the Cold War with a decidedly western bias (Chant, 2008). Others have added to these theories but the ever changing nature of each of the mentioned factors coupled with the unpredictable nature of globalization make determining any universal doctrine of economic growth difficult (Porter, 1990). As Charles Kenny of The World Bank and David Williams of Oxford University acknowledge:

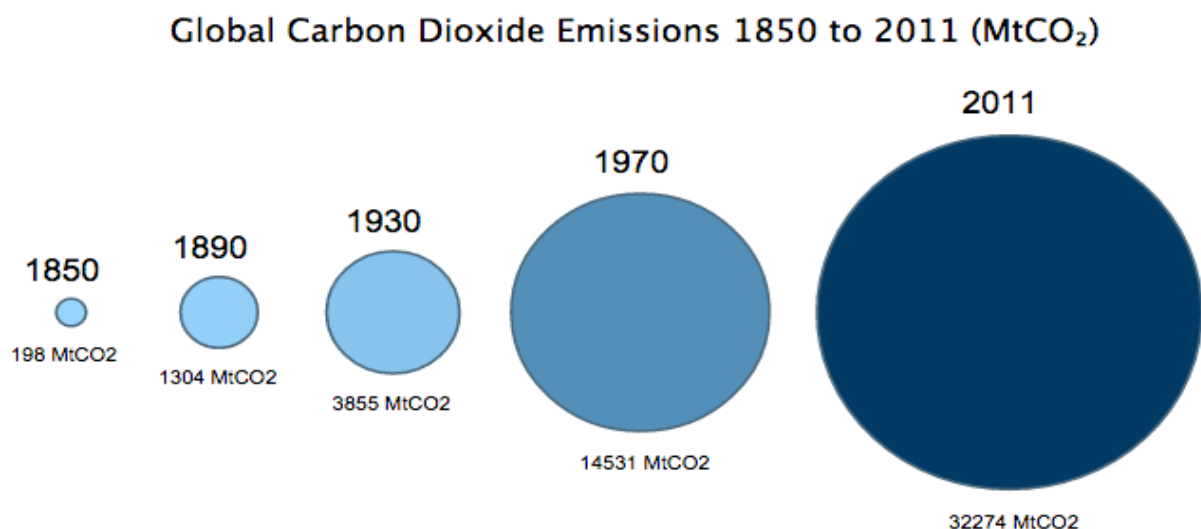
“Overall, attempts to divine the cause or causes of long-term economic growth, testing a wide range of possible determinants using statistical techniques, have produced results that [...] are frequently contradictory to results reported elsewhere. That is, empirical evidence is hardly unanimous in support of a particular view of the growth process [...] The empirical evidence, however, seems to provide little firm guidance for the universal efficacy of any particular policy prescriptions.” (Kenny & Williams, 2001)

Despite the challenges, the empirical analysis continues. The World Bank uses a four-tiered national income per capita based system to divide the world. The top 80 countries make over \$12,736 per person and represent 1.1 billion of the world's population. The 53 upper-middle income nations earn \$4,126 to \$12,735 and have a population of 2.5 billion. Lower-middle income countries make up 51 nations covering about 2.5 billion people with an

income of \$1,046 to \$4,125 per capita. Finally, the 31 low-income countries represent people making \$1,045 or less per year (World Bank, 2015).

Clearly, no matter what form or nature the labels of development stages take, there is a great divide in the world between the “haves” and the “have nots,” the “developed” and “developing.” Since the dawn of the Industrial Revolution around 1760, the gap in global income equality began to rapidly expand. As some of the world’s largest economies (namely China and India) have begun swift development in the last 20 years, that expanding inequality has begun to slowly shrink. Despite this narrowing inequality gap, the impacts of such developmental disparity are felt across the globe as mortality rates, education and literacy levels, hunger, health care, disease control, and general poverty levels leave massive room for improvement. What a review of the larger issues of development tell us is that policy makers, NGO’s, heads of state, and anyone involved in bettering global well being must realize and acknowledge that a unique blend of policy prescriptions will be needed for each individual country at any given time (Kenny & Williams, 2001).

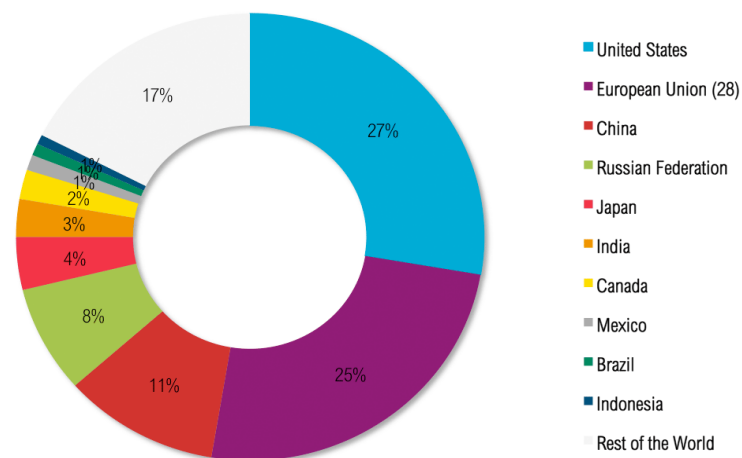
Predictably, as nations began further industrializing in the latter half of the 19th century, CO₂ emissions began to rise accordingly. In fact, between 1850 and 2011, CO₂ emissions multiplied to over 160 times their original level. Compared to GDP growth, that number is astronomical. For perspective, in 1820 the adjusted global GDP was about I\$694 billion (1990 international Geary-Khamis dollars) while in 2003 that figure had grown to nearly I\$41 trillion, a growth multiplier of merely 60 times (Bolt & Van Zanden, 2014).



Source: World Resources Institute. <http://www.wri.org/blog/2014/05/history-carbon-dioxide-emissions>

What is also notable is how concentrated these historical emissions are to a relatively small number of countries. As you can see below, 83% of cumulative CO₂ emissions between 1850-2011 came from 37 countries. What’s more is that the United States, the Russian Federation, and China alone account for nearly 50% of all CO₂ emissions in that timeframe.

Cumulative CO₂ Emissions 1850–2011 (% of World Total)



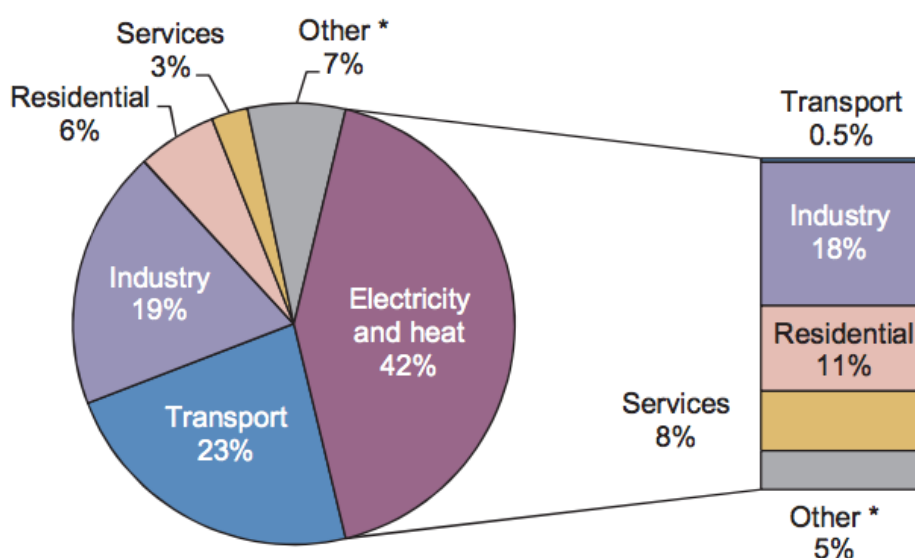
<http://bit.ly/11SMpjA>

WORLD RESOURCES INSTITUTE

Source: <http://www.wri.org/blog/2014/11/6-graphs-explain-world%E2%80%99s-top-10-emitters>

When working to understand the impacts of GCAs on participating nations, an important consideration is not only who is doing the emitting, but also the source of those emissions. Presumably, because all participating nations at some point will work to limit their CO₂ output, it will be necessary to know where to focus their efforts to be most efficient. In 2013, over 42% of all global CO₂ emissions came from electricity/heat generation. Of that subsection, 72% of emissions came from coal (International Energy Agency [IEA], 2015a). It stands to reason that the form of energy production to avoid or limit if aiming to reduce a nation's carbon footprint would be coal-fired electricity generation.

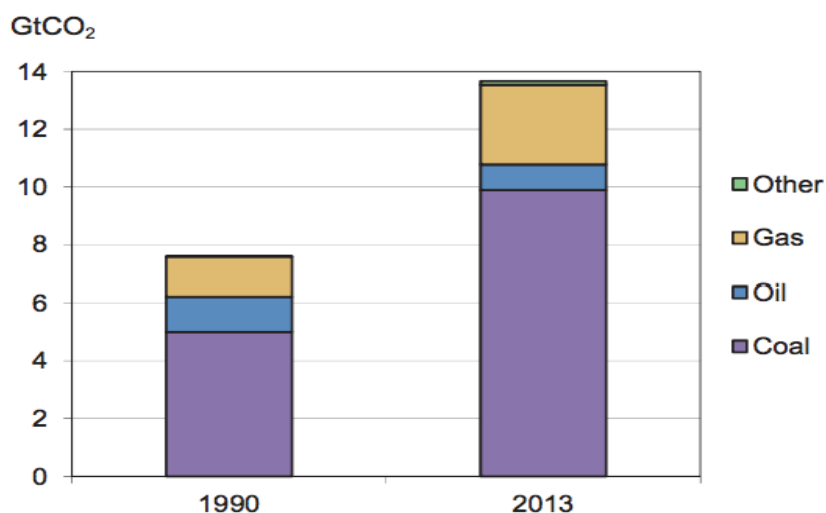
Figure 10. World CO₂ emissions by sector in 2013



Source: International Energy Agency.
<https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights20>

[15.pdf](#) *Note: Also shows allocation of heat and electricity to end use sectors. Other* includes agriculture/forestry, fishing, energy industries other than electricity and heat generation, and other emissions not specified elsewhere.

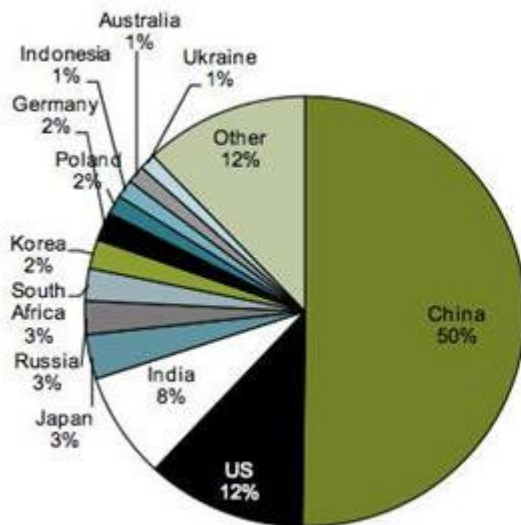
Figure 11. CO₂ emissions from electricity and heat generation*



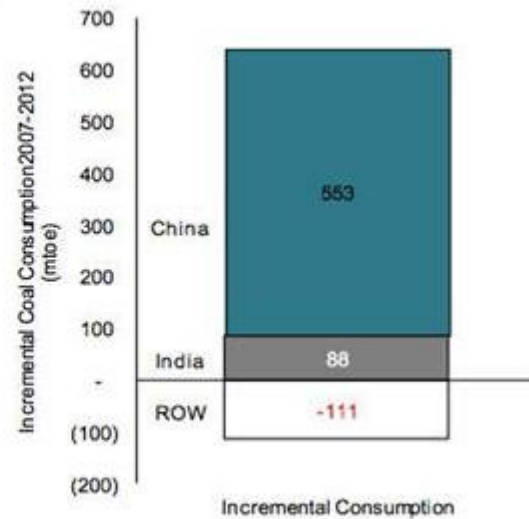
* Refers to main activity producers and autoproducers of electricity and heat.

Source: IEA.
<https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>

A look at the data, however, shows that some of the world's fastest growing large economies, India and China, have clearly chosen coal to fuel their growth. Today, China uses about as much coal each year as the rest of the world combined. Despite recent efforts to curb coal use, highly developed nations still generate much of their electricity from the fuel, with the U.S. and OECD countries producing 38 and 31 percent of their electricity, respectively, from coal in 2014 (World Bank, 2014). Indeed, between 1980 and 2012 the world increased coal consumption by 107 percent (BP, 2013). Why? Warnings of the effects of burning fossil fuels have been around long before 1980. Clearly there is a national interest in pursuing energy production that may negatively impact the rest of the world. Any GCA that attempts to move developing nations directly to an energy mix void of coal power with a major focus on CO₂ mitigation will only do one of two things; either stunt that nation's economic development or be laced with incentives that must go far beyond \$100 billion per year to offset those opportunity costs of displaced development.

Exhibit 13 World Coal Consumption (2012)

Source: BP Energy Survey 2013 and Bernstein analysis.

Exhibit 14 Incremental Coal Consumption (2007-12)

Source: BP Energy Survey 2013 and Bernstein analysis.

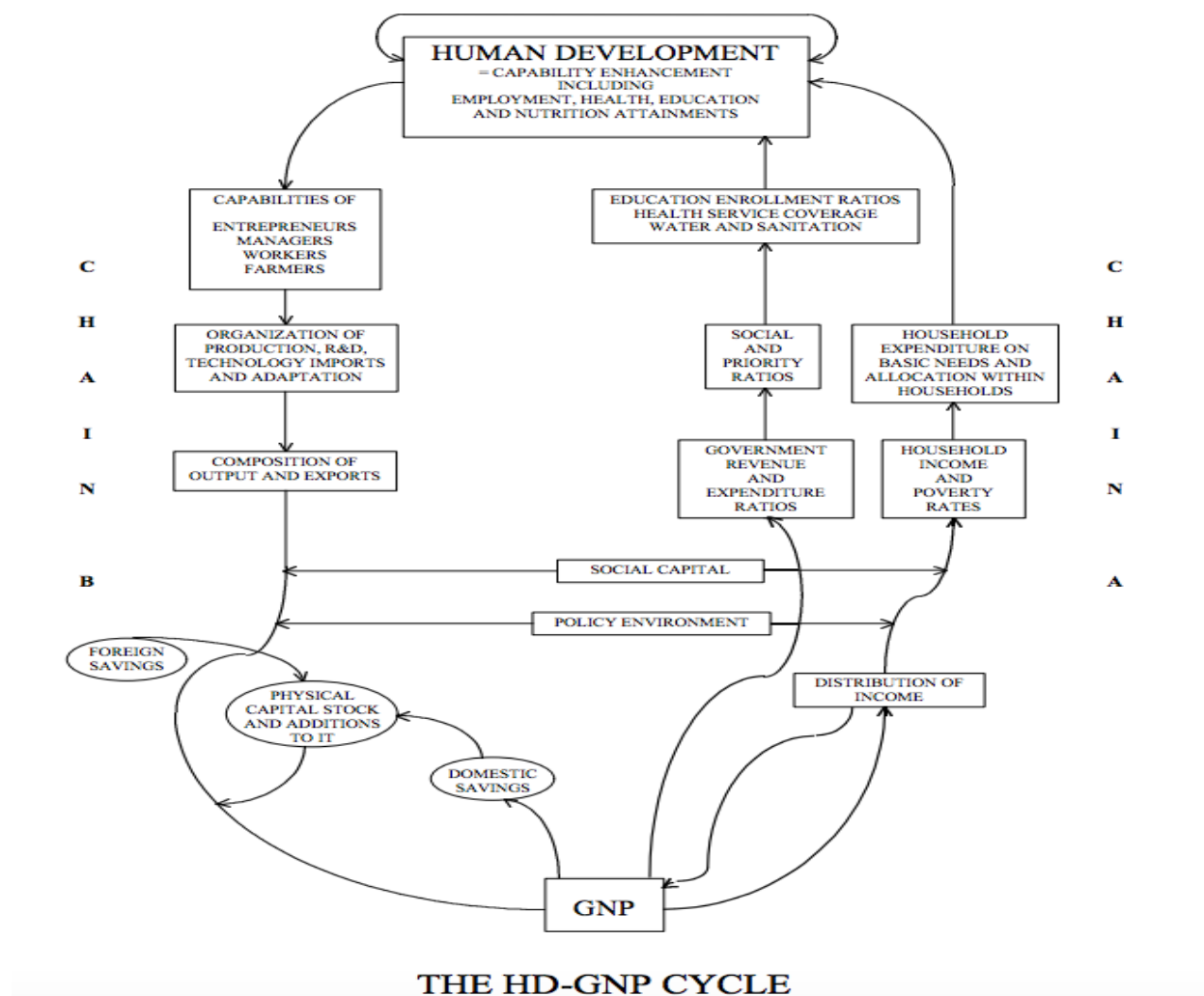
Source: <http://oilprice.com/Energy/Coal/Coal-Use-Falling-Proof-of-Progress-to-Low-Carbon-Future.html>

This discussion about responsibility of emissions has been a major point of conflict in recent global climate negotiations. The argument centers around how to balance future economic growth for low-income nations and mitigating catastrophic future climate change for the globe as a whole.

Economic and Human Development Nexus

Beyond the general consideration of economic development is a parallel conversation on human development. That is, efforts should be made to offer people a wider variety of choice in their existence allowing for longer, healthier, and more fulfilling lives (Ranis, Steart, & Ramirez, 2000). While it is commonly believed that economic growth and human development share a bidirectional relationship, the number of variables involved and the inclusion of human decision making and prioritization along the way tends to cloud this nexus. These decisions are not only made by formal policy makers, but also citizens and institutions in their personal preferences. As each country follows inherently unique development patterns as discussed previously, there is no certainty that economic development necessarily leads to reductions in absolute poverty in these expanding nations, at least in the short term. When taking a longer view, however, it is generally accepted that poverty and inequality recede as economic growth advances (Fields, 1989).

This reduction in poverty and inequality leads to a larger set of rational options for citizens. Presumably, as people have greater flexibility in life choices, they have a better chance of improving their lives, leading to an overall increase in societal well-being, or human development. A two-chain relationship between human development (HD) and economic growth (EG) was presented by Ranis et al. (2000) and offers a visual accounting for the various inputs, and their complex interactions, within the overall process.



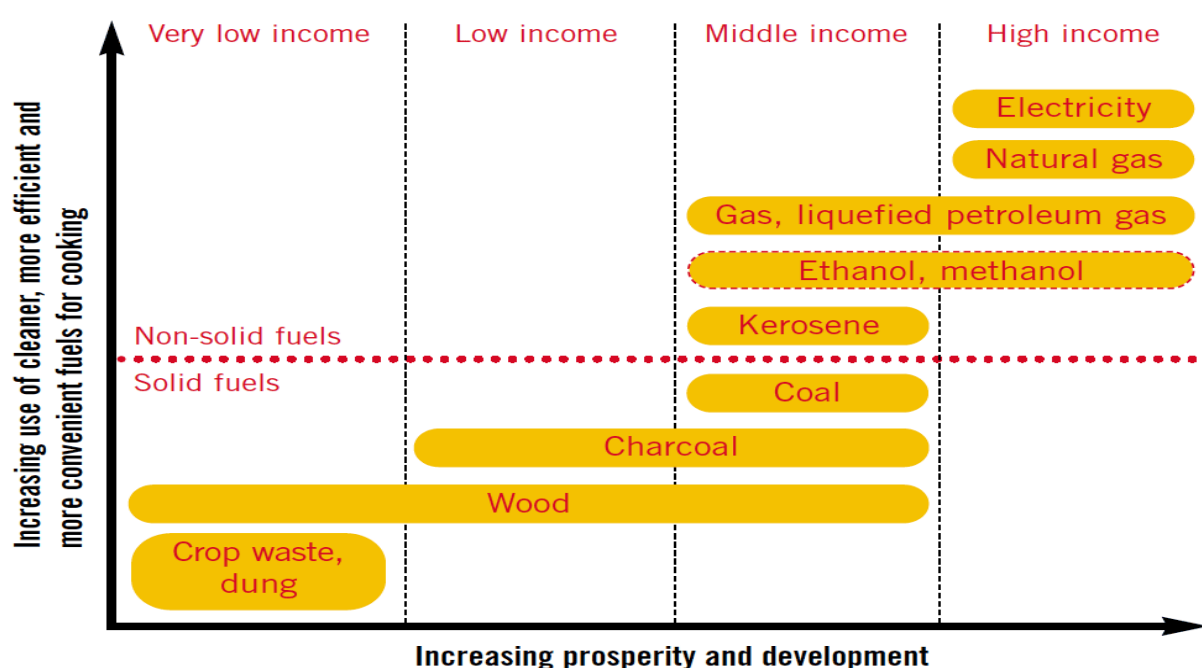
Source: Old Dominion University. <http://www.cs.odu.edu/~dlibug/ups/rdf/remo/qeh/qehwps/wps18dia.pdf>

Where this discussion takes on expanded meaning in the realm of GCAs is when looking closely at the role of energy development and consumption in low-income or developing nations. GCAs impose a certain course of action for participating nations, the main goal being (at least of the Paris agreement and those of the recent past) to limit CO₂ emissions to a level that will halt global temperatures from rising beyond a certain threshold. As shown, CO₂ emissions within most nations come primarily from energy production. Understanding, then, the relationship of energy consumption with economic development can serve policy makers well when evaluating trade-offs between economic development with an eye towards human development, or emission mitigation efforts to comply with GCAs.

Understanding the Energy Ladder Theory

Based on the latest data, 17% of the global population has no access to electricity, and 38% rely primarily on biomass fuels for cooking (IEA, 2015b). In order to effectively prompt systemic green change in the low-income world, climate project financiers need a robust

understanding of how fuel transitions occur. Energy researchers have identified a theory known as the energy ladder that explains how fuel choice changes with income. According to the energy ladder theory, as incomes rise, people purchase cleaner, costlier, and more convenient fuels. At the lowest portion of the energy ladder, households rely on burning animal dung or crop wastes for their energy needs. At the highest incomes, people transition to relying almost entirely on a well-diversified energy grid that may include a number of renewable electricity generation resources. Empirical evidence for the existence of an energy ladder has been found in India (Bao & Reddy, 2007; Heltberg, 2004; Pachauri & Liewen, 2008), Zimbabwe (Hosier & Dowd, 1987), Brazil, Nicaragua, South Africa, Vietnam, Guatemala, Ghana, Nepal (Heltberg, 2004), Burkina Faso (Ouedraogo, 2006), and Mexico (Masera, Saatkamp, & Kammen, 2000), among others.



Source: Our World in Data. <http://ourworldindata.org/wp-content/uploads/2013/11/the-energy-ladder-household-energy-and-development-inextricably-linked-who-2006.png>

One important limitation of the energy ladder model is that household fuel transitions are often not complete. Instead, households that adopt a new cooking technology (such as a natural gas stove) still keep older biomass-powered stoves and continue to use them (Masera et al., 2000; Pachauri & Liewen, 2008; Van der Kroon, Brouwer, & Van Beukering, 2013). This is done both for fuel security and for cultural reasons (Masera et al., 2000; Van der Kroon et al., 2013). Additionally, other identified factors play a role in fuel switching, such as the external environment of a household, energy prices, availability of alternative energy sources, and home ownership (Pachauri & Liewen, 2008; Van der Kroon et al., 2013). This is certainly not an exhaustive list. The energy ladder theory of energy development affects global climate initiatives in a number of key ways, which will be discussed in the following sections.

1. Sustainable Development Requires Electric Grid Access

All lower rungs of the energy ladder use carbon-emitting fuels. The carbon emissions from wood fuels are made even worse by the associated deforestation resulting from heavy wood fuel use (Allen & Barnes, 1985; Bruce, Rehfuss, & Smith 2011). While biomass fuels

at the lowest portions of the energy ladder do have the potential for being carbon neutral since biomass fuel sources sequester carbon out of the atmosphere when sustainably replanted, real-world fuel use is not that careful and often results in a significant carbon footprint (Johnson, 2009). In middle portions of the ladder, carbon intensity rises even higher as communities begin to rely on coal and other conventional fossil fuels (Burke, 2013). Only when nations start transitioning to natural gas and renewable energy resources does carbon intensity begin to drop (Burke, 2013). However, as experience in China has demonstrated, effective use of renewable electricity requires grid connectivity (Feng, Haitao, & Shoude, 2010). Grid connectivity is often prohibitively expensive, especially in rural areas where many of those who struggle with energy poverty reside (Deichmann, Meisner, Murray, & Wheeler, 2011). Even when the energy poor are given access to easy electrification, the opportunity is ignored for a variety of reasons (Bhattacharyya, 2006a; Lee et al., 2014). Often, electricity is more expensive than biomass fuels because the opportunity cost to collecting biomass fuels is not high for many impoverished families (Bhattacharyya, 2006b; Schlag & Zuzarte, 2008).

2. Programs to Increase Energy Penetration are Unlikely to be Maximally Effective

Providing increased access to a diversity of fuel types is an important step in raising energy poor communities out of poverty, but that process is unlikely to result in a complete fuel substitution. Mansera et al. (2000) first pointed this out in examining rural Mexican communities, which had access to LNG, but often continued to use wood fuels even after purchasing an LNG stove. This phenomenon has been empirically noted in other areas as well (Pachauri & Liewen, 2008; Van der Kroon et al., 2013). The uncertainty involved in fuel usage will make it difficult for international organization to account for actual climate change mitigation effects.

3. Emissions in Low-Income Countries Will Likely Get Worse Before They Get Better

Emissions in low-income regions are not likely to go down as they develop for two reasons. The first is that carbon intensity (measured as tons of CO₂ emissions per terajoule of energy created) rises until per capita income reaches a level of \$6000, roughly the level that Guatemala reached in 2010 (Burke, 2013). Past this point, countries begin a slow descent as energy production systems gain efficiency. The second reason is increased consumption. Low-income countries' energy consumption is slated to increase over the next decades, rising greenhouse gas emissions along with it, even if carbon intensity trends downwards (Wolfram, Shelef, & Gertler, 2012).

Energy Consumption, Emissions, and Economic Development

From an even wider scope than that offered by the energy ladder model, there is a vast body of empirical work examining the relationship between emissions, energy consumption, and economic development. A paper by Mohammad Salahuddin and Jeff Gow (2014) offers and extensive literature review on studies examining these interrelations and the potential for decoupling. Their analysis finds an intense academic debate regarding the direction of these relationships (whether energy consumption drives economic development, vice versa, or if the relationship is bidirectional), but also a general academic agreement that there is some sort of causal relationship. More recent studies have offered even more evidence for the existence of a causal relationship (Jammazi & Aloui, 2015; Pala, 2016). Further, they find no evidence for absolute decoupling, a phenomenon of increasing economic growth

simultaneous to decreasing emissions. For countries that were able to slow (but not halt and certainly not reverse) their emissions increases during periods of growth, changing the composition of their energy mix was key. Perhaps the most troubling academic agreement that Salahuddin & Gow (2014) uncover is the intense link between global energy consumption inequality and global income inequality--finding that inequality in incomes is the key driver for differences in global emissions. Therefore, any agreement that requires low-income countries to cap or cut emissions is effectually instructing them to forego much-needed economic development.

Can fund transfers hurt low-income countries?

Aside from problems of efficacy and efficiency in implementation of GCA in low-income countries, there are also a number of potential pitfalls that can make GCA-related fund transfers to low-income countries not only ineffective, but also harmful. Among the risks facing low-income countries participating in GCA financing schemes are exposure to price volatility (for market-based carbon reduction schemes), rent-seeking and corruption (for non-market-based carbon reduction schemes), and Dutch disease (Jakob, Steckel, Flachsland, & Baumstark, 2014). Much of this risk can be mitigated by smart policy construction, but the vagueness of the COP21 agreement fails to meet that standard.

Cost of Electricity Development

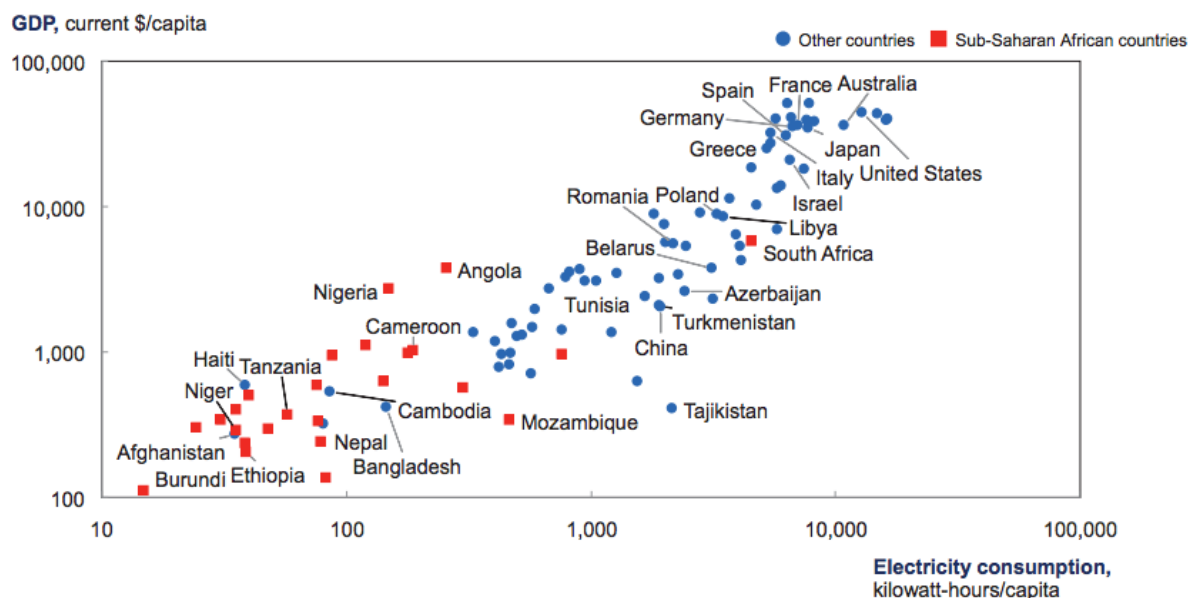
As with any decision in a low-income nation, it is all about the trade-offs between resources on hand and issues to address. There is never enough of the former, and always too many of the latter. When debating investment options in the energy and electrification space it is no different. As with all other decisions, the form of any negotiations will vary greatly between each country depending on finances, existing infrastructure, industrial demand, political climate, investment and technological capital available, government credibility, and a host of other considerations. As the U.N. has acknowledged:

“Much of today’s prosperity rests on secure and stable access to energy. Without requisite energy infrastructure, modern production grinds to a halt, as can be witnessed in parts of the developing world...With few exceptions, countries that are rich have become so through industrial development...From this, the conclusion emerges that some countries are rich while others are not because the former have managed to ensure their access to energy by building infrastructure.” (Isaksson, 2010)

While all nation’s face their own unique blend of circumstances, we can look at some examples to develop a proxy set of recommendations for low-income nations. In Sub-Saharan Africa (SSA), lack of access to advanced electricity networks is nearly universal. Most electricity in this region is delivered via diesel generators that operate at a cost of 3-6 times that paid by grid consumers. While the demand for electricity is clearly present, the costs and lack of infrastructure lower GDP in the region from 1 to 3 percent annually. Finding sustainable ways to increase electricity generation and transmission while lowering costs will have major economic benefits (Castellano, Kendall, Nikamorov, & Swemmer, 2015).

Exhibit 1 Electricity consumption and economic development are closely linked; growth will not happen without a step change in the power sector.

Relationship between electricity consumption and GDP,¹ 2011



Source: McKinsey and Company, Brighter Africa (2015) Accessed at:
<http://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/powering-africa>

Research by McKinsey and Company has shown that for developing nations to increase electrification rates from 20 percent to 80 percent, they can expect a timeframe of 25 years. The estimates from this study in SSA show that if every country were to build enough to meet its domestic needs by 2040, generation would increase about four fold over 2010 levels, natural gas and coal would account for a majority of power, and the costs would exceed \$835 billion dollars in investment. Of course, this focus on meeting demand and facilitating growth would lead to an increase in CO₂ emissions. If SSA countries instead pursued an aggressive renewable energy implementation plan, they could expect up to 27 percent less CO₂ emissions, but would see costs rise \$153 billion dollars (Castellano et al., 2015). When developing electricity systems, determining the balance between cost, generation capacity, demand, and emissions is done on a generational scale. Clearly, cost considerations will be key to any economic and environmental decisions moving forward in developing nations. Where some nations will affordably and efficiently be able to implement large-scale renewable projects into existing infrastructure to meet strict climate goals, others will have to prioritize developing baseload capacity with coal and gas generation while making large investments into transmission infrastructure to industrialize and grow the economy before any talk of curbing CO₂ emissions could be considered. Because of the wide spectrum of current electrification and energy status between individual nations, prescribing any one path forward is impossible and denotes a major hurdle for efficacy and establishing consensus when crafting GCAs.

Conclusions

Scientific consensus tells us that greenhouse gas emissions, especially CO₂, will be a threat to our planet moving forward if not mitigated. As the recent COP21 conference in Paris showed us, nations are eager to come together and take some form of action on this front. Unfortunately, as we have shown, many questions remain as to the efficacy of GCAs as currently pursued. This paper specifically aimed to answer the question: “What role, if any, should poorer nations play in global climate agreements?” The answer, according to the data and information reviewed in this paper, is “very little.”

Yes, all countries should recognize the threat of CO₂ emissions and climate change. However, instead of agreeing to take action to peak CO₂ emissions as soon as possible, countries should be aiming to do what is best for their people. That is the duty of lawmakers and leaders to their citizens. We argue that five considerations must be made by parties negotiating GCAs before taking any concrete, legally-binding action.

1. Recognize the unique situation of each individual nation

The language of the Paris agreement acknowledges that “Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity” (United Nations, 2015). Unfortunately, it assumes that taking action on climate change immediately allows the type of flexibility needed for all countries to simultaneously address all of these other issues as well. As the discussion on the energy-ladder and the nexus of energy consumption and economic development shows, each country is in a very unique place in regards to its energy mix. This is in addition to a host of other development and well-being priorities such as healthcare, education, poverty, homelessness, hunger, unemployment, safety etc. While GCAs allow for world powers to come together and craft a collective action agreement, it should not be expected that the poorest or least developed nations would, or should, prioritize climate change above the immediate needs of their people.

2. Address the disparity of current and cumulative CO₂ emissions among nations

The top 10 emitting countries in the world in 2011 were China, U.S., India, the Russian Federation, Japan, Germany, Republic of Korea, Iran, Indonesia, and Saudi Arabia. Together they emitted nearly 65 percent of global emissions (World Bank, 2015). If these countries were to cut their combined emissions by just 10 percent, that would be the equivalent of eliminating *all* CO₂ emissions of the bottom 155 emitting countries in the world. Many of those 155 countries are well established, industrialized economies who have the means along with both the political capital and environmental incentive to pursue emissions cuts. There are, however, dozens of nations on that list with a host of concerns to address before emissions cuts would become a priority. Instead of expending valuable time, funds, resources and manpower crafting nationally determined contributions for CO₂ emissions, they should focus their efforts elsewhere.

The same trend is visible when considering cumulative emissions. As noted, a mere three nations account for nearly 50 percent of all emissions since 1850. While it should not be expected that low-income nations exert themselves mitigating emissions in the CO₂, it is a very real possibility that many of these nations could face impacts of cumulative climate change in the near future. If this is the case, those nations responsible for creating the

problem, should also be tasked with addressing it. World powers pledging money into a fund that they ostensibly control, with ill defined rules for distribution and lack of accountability hardly replace the very real discussion that should take place surrounding historic inequality.

3. Understand that timelines of economic development and CO₂ mitigation are not necessarily complementary

For developing nations, especially those in the lowest income brackets, the path towards economic development may not have even begun in earnest and is likely to carry on for generations. Recognizing that any efforts to expand GDP from current levels may not allow for GCA compliance in the prescribed timelines is crucial. Are there best practices that can be shared and implemented from other nations that will allow for more responsible and sustainable industrial growth moving forward? Absolutely. But is there a singular growth pattern that be followed for all global economies? Of course not. Instead, leaders and policy makers should ensure that all parties working with their nation in any capacity have the best interest of their country in mind always. Pursuing collective goals that promise returns in decades may not be feasible when citizens are starving now.

4. Recognize that agreements may not be satisfied or upheld

When dealing with GCAs, policy makers need to account for the real possibility that other parties will not uphold their commitments. This is especially true for low-income nations who see promises of financial, technological, or human capital as the only incentive to agree to action. The opportunity costs of pursuing one path of environmental or economic progression only to pivot in another direction when promised aid or allied action is withheld in the future is a costly lesson and could set countries back years in their efforts or place them at a disadvantage moving forward. For example, the 2005 Kyoto protocol was not signed or ratified by the three largest emitters, and today only regulates 15 percent of global emissions. Also, of the \$100 billion annually to be distributed by 2020, only a fraction has actually been pledged with no concrete roadmap for obtaining full funding. While developing nations see the lure of money as an incentive to make concessions and major changes, the idea that the funding will be available until full compliance is achieved is uncertain.

5. Prioritizing real change over symbolic action

In the Paris agreement, it was reaffirmed that world economic leaders would pool \$100 billion per year beginning in 2020 to aid less developed nations with mitigation and adaptation. There were also a record number of signatories to the landmark treaty which many felt was a sign that the world was ready to tackle CO₂ emissions and climate change. The problem with such a public show, is that it often requires leaders to craft an agreement that can reach a much higher threshold for consensus which necessarily requires the weakening of overall prescriptions. While Paris became a symbolic gesture that may in and of itself facilitate meaningful future actions, the fact remains that a strong set of actions undertaken by the world's top 5 or 10 emitters would prove to be infinitely more productive at limiting global CO₂ emissions than a carefully worded, all encompassing, appeasement of 195 diverse nations. Politically speaking, this is understandable, but developing nations should use their voice to demand real action over political grandstanding. This may mean several different climate agreements for groups of countries at various economic stages.

All five of these considerations are addressed in this paper. The additional challenge, however, is that this is only a portion of the factors that go into such complex diplomatic negotiations. By recognizing the flaws and uncertainties inherent in all GCAs to date, and balancing those with the array of competing priorities, we argue that poor, developing nations in most cases should avoid committing to concrete emissions mitigation efforts without more clarity. Instead negotiations should focus on smaller, more homogenous groups of nations who can agree to more transparent, measurable, and comprehensive reforms.

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**Cross-subsidies for the Electric Sector in Colombia:
are they enough to help poor families?**

Enrique B. Cedenó

Business School, Nanjing Tech University. No.30 Puzhu Road, Nanjing, China.

Abstract.

Despite cross-subsidies being questioned on grounds of promoting over consumption and missing the target population, they can be used by the government to achieve goals of universal access, social equity and national development. After restructuring of its electricity sector in 1994 Colombia implemented a policy of cross-subsidies in electricity tariffs. According to this policy poor families living in less affluent neighborhoods could receive a maximum subsidy of 50%. The system is financed by contributions from more affluent residential customers, industrial, commercial and other sectors. Most recently available census data for 2005 indicates that for poor families in the first income decile electricity bill represents 90% of average household disposable income; whereas for families in the last income decile it represents 3%. Subsidies received by poor families are not enough to help them significantly. This research proposes an optimization model to determine contribution factors that can provide full electricity subsidy to poor families in the first income decile. The study period is limited to the period from 2005 until 2007 due to the limited availability of census data. Electricity in Colombia is provided at a subsidy to 95% of residential customers from 2005 until 2007. During this period the cross-subsidy system under collects and requires budget subsidies from the government of 15% of the total subsidy. Then, not only subsidies are not enough to help poor families but the government is diverting financial resources that could be used to fund other social programs to finance this deficit. The optimization model presented here identifies alternatives that can provide full electricity subsidy to poor families in the first income decile, increase the subsidy factors, make average bill more equitable and eliminate the need for budget subsidies but require increasing the limits on subsidy and contribution factors set forth by current regulations.

Keywords:

Cross-subsidies, budget subsidies, electricity tariffs, social equity, Colombia.

1. Introduction.

Despite cross-subsidies often being questioned on grounds of promoting over consumption and missing the target population (Sun & Lin 2013; Pineau 2008; Lin & Jiang 2011), they can be used by the government to promote social equity, universal access and national development (Chattopadhyay 2007; Faulhaber 1975). Electricity subsidies in China (Sun & Lin 2013) and in British Columbia, Canada (Pineau 2008) have been reported missing the target population providing benefits to higher income consumers. However, cross-subsidies may be needed because of political and equity considerations, as in the electricity sector in Colombia described in this research. In China, to provide a competitive edge, electricity tariffs are lower than the cost of supply (Lin & Jiang 2011) and cheaper than in developed countries (Liu & Li 2011). In Brazil large industrial customers also benefit from lower tariffs to increase their competitiveness (Voll et al. 2003). Restructuring of the electric sector in Colombia established that poor families living in less affluent neighborhoods could receive a maximum subsidy of 50%.

The electricity sector for Colombia studied in this research is financed by contributions from more affluent residential customers, industrial and commercial sectors. Tariffs for these customers are higher than the cost of supply; whereas tariffs for subsidized customers are below the cost of supply, this pricing creates cross-subsidies. The government provides budget subsidies to finance any deficit. A combination of cross-subsidies and budget subsidies could be implemented in electricity markets in which the government owns and regulates the public network (Heald 1997; Pineau 2008). However, when operation and ownership are separated from regulation, as for instance in the MISO (Midwest Independent System Operator) and PJM (Pennsylvania, New Jersey and Maryland interconnection) markets in the US, with no political power to access budget subsidies, regulators only have access to cross-subsidies to achieve their social or political goals (Heald 1997). In Colombia, more affluent residential groups contributed a maximum of 60% of their electricity bill at the beginning of the restructuring process in 1994 (Comisión de Regulación de Energía y Gas (GREG) 1996). Currently, these residential consumers and industrial and commercial sectors contribute approximately 20% of their electricity bill. Most recently available census data for 2005 indicates that for poor families in the first income decile electricity bill represents 90% of average household disposable income; whereas for families in the last income decile it represents 3%. Subsidies received by poor families are not enough to help them significantly. The contribution of this paper is to propose an optimization model to determine contribution factors that can provide full electricity subsidy to poor families in the first income decile. This optimization model is used to identify alternatives that can provide full electricity subsidy to poor families in the first income decile, increase the subsidy factors, make average bill more equitable and eliminate the need for budget subsidies but require increasing the limits on subsidy and contribution factors set forth by current regulations. The research presented here reports on all the available aggregate data per company serving the electricity sector in Colombia for all residential and non-residential consumers during years 2005, 2006 and 2007 (Sistema Unico de Información (SUI) 2014). Limiting the study period to these three years is due to access to census data for year 2005 with forecast for years 2006 and 2007 (Departamento Administrativo Nacional de Estadísticas 2006). The method presented here can be applied to any other period provided access to census data is granted. The author is currently looking into this issue as part of future research.

In regulated electricity sectors with vertically integrated utilities subsidies can occur among the different activities of generation, transmission and distribution (Sawkins & Reid 2007; Heald 1996). When electricity is produced using fossil fuels, there could be cross-subsidies among these two sectors, as occurs in China and Colombia. However, subsidies between and among consumers groups are more relevant for regulators and public policy makers (Faulhaber & Levinson 1981). This is the type of subsidy between consumers of a single output (Faulhaber 1975) that are treated differently by creating categories using means that are not economically justified (Sawkins & Reid 2007; Heald 1997). In the Colombian electricity sector less affluent residential groups receive electricity at a cost lower than the cost of supply, whereas more affluent residential groups pay a higher price. In India, cross-subsidies were employed to provide lower cost electricity to the residential and agricultural sector by raising the tariffs of the industrial sector (Chattopadhyay 2007; Chattopadhyay 2004). In China industrial and commercial tariffs are higher than residential tariffs to provide for subsidies (Lin & Jiang 2011; Sun & Lin 2013). In 2007 almost 90% of the residential subsidies in China went to payments towards subsidized electricity service (Sun & Lin 2013). In Brazil the large industrial customers receive subsidies financed by residential, commercial and small industrial customers (Voll et al. 2003). In Colombia the electricity services are provided at a subsidized price to approximately 95% of all the residential consumers during the period analyzed in this research, as will be shown later in this paper. However, for customers in the first income decile despite receiving a 50% subsidy electricity bill still represent almost 90% of their disposable income. This research seeks to identify alternatives that can provide full subsidy to these customers.

This paper is organized as follows: section 2 describes characteristics of the deregulation process in Colombia and the rules governing the tariff structure. Section 3 presents the optimization model to determine optimal subsidy and contribution factors subject to various restrictions. Section 4 describes characteristics of the electricity sector during the study period from 2005 until 2007. Section 5 presents four alternative allocation methods for subsidies and contribution factors that eliminate the need for budget subsidies, give full subsidies to customers in the first income decile and improve equity in tariffs. Section 6 gives some conclusions about the research presented here.

2. Restructuring of the electricity sector in Colombia.

Restructuring of the electricity sector in Colombia was motivated by the energy crisis of 1992 when hydrological generation capacity was reduced due to an extremely dry season resulting in a long period of load rationing to prevent blackouts. This crisis also had political consequences (Larsen et al. 2004; Barrera Rey & García Morales 2010), transforming politicians and energy planners into risk avoiders favoring over capacity to prevent brownouts, blackouts and any social unrest that could ultimately affect elections. Then, restructuring of the sector considers social responsibility principles and equity. This is reflected on the passing of Law 142 (Congreso República de Colombia 1994a) which dictates principles of equity and social responsibility in the tariffs and the provision of subsidies towards less affluent sectors (Comisión de Regulación de Energía y Gas (CREG) 1997a).

Laws 142 and 143 of 1994 (Larsen et al. 2004; Congreso República de Colombia 1994a; Congreso República de Colombia 1994b) provide the legal framework for the deregulation of the sector. Law

142 (Congreso República de Colombia 1994a) establishes the government's ability to oversee and regulate the provision of residential public services. This law dictates principles of equity and social responsibility in the tariffs and the provision of subsidies towards less affluent sectors. This law also establishes neutrality principles regarding the use of common assets to promote investments and competition. This law gives authority to the regulators of each public service sector to establish principles and fundamentals to determine tariffs for the final consumer. Law 143 (Congreso República de Colombia 1994b) is directed specifically towards the electricity sector in all its activities of generation, transmission, distribution and commercialization. This law gives authority to the Gas and Energy Regulatory Commission (CREG) to define the methodology to determine electric tariffs (Comisión de Regulación de Energía y Gas (CREG) 1995; Comisión de Regulación de Energía y Gas (CREG) 1996; Comisión de Regulación de Energía y Gas (CREG) 1994b; Comisión de Regulación de Energía y Gas (CREG) 1997a; Comisión de Regulación de Energía y Gas (CREG) 1997b) as well as tariffs to remunerate the access and usage of transmission networks (Comisión de Regulación de Energía y Gas (CREG) 1994a; Comisión de Regulación de Energía y Gas (CREG) 2000).

CREG resolution 012-93 (Comisión de Regulación de Energía y Gas (CREG) 1993) mandates that electricity distribution companies in Colombia should apply residential tariffs according to the same residential classification employed in the provision of residential public water service. This system is based on a residential classification of homes to identify the target population in neighborhoods for the purpose of tariff assignment (Uribe-Mallarino 2008). Based on the residential classification of homes, there are six residential groups from 1 to 6 in increasing order of financial wealth. Groups 1 to 3 are considered less affluent groups and are the beneficiaries of the subsidies. Group 4 is considered neither a contributor nor a subsidized sector; it should pay solely for the cost of the service. Groups 5 and 6 are considered more affluent. These groups contribute to the subsidies in addition to the contributions made by the industrial and commercial sectors. Residential electricity tariffs are defined in resolutions CREG 80-95 (Comisión de Regulación de Energía y Gas (CREG) 1995), CREG 09-96 (Comisión de Regulación de Energía y Gas (CREG) 1996) and CREG 78-97 (Comisión de Regulación de Energía y Gas (CREG) 1997a), whereas non-residential electricity tariffs are defined in resolution CREG 79-97 (Comisión de Regulación de Energía y Gas (CREG) 1997b).

Based on the rules for the sector a simplified general expression to compute tariffs is provided below:

$$T(t)_{ijk} = (1 + \rho_{ik}(t)) C_{jk}(t) \quad (1)$$

Where:

$T(t)_{ijk}$: tariff for customer type i at voltage level j provided by company k at time t .

$\rho_{ik}(t)$: subsidy or contribution factor for customer type i at time t provided by company k .

$C_{jk}(t)$: cost of supply at voltage level j provided by company k at time t .

Initial contribution factors for customers in groups 5 and 6 were, on average, 60 and 68%, respectively (Comisión de Regulación de Energía y Gas (CREG) 1996). CREG 78-97 (Comisión de Regulación de Energía y Gas (CREG) 1997a) defines equivalent $C_{jk}(t)$ for the thirty companies serving the sector during the beginning of the restructuring process. Subsequent residential contribution factors per company defined in CREG 80-95 (Comisión de Regulación de Energía y Gas (CREG) 1995) range from 20 to 35% for customers type 5 and from 20 to 48% for customer type 6. Non-residential contribution factors were as high as 30% in 1998 (Comisión de Regulación

de Energía y Gas (CREG) 1997b). All contribution factors were established to be lower or equal to the limiting factor of 20% after 2000 (Comisión de Regulación de Energía y Gas (CREG) 1997b). Initial maximum subsidy factors (Comisión de Regulación de Energía y Gas (CREG) 1997a) are negative 50, 40 and 15% for customer types 1, 2 and 3 respectively. Residential customers type 4 are only required to cover their cost of supply. Then $\rho_{4k}(t) = 0 \quad \forall k$. Subsidized prices are provided to a maximum of the subsistence level of consumption; additional consumption is priced higher at the cost of supply (Comisión de Regulación de Energía y Gas (CREG) 1995). The subsistence level was set at 200 Kwh per month (Comisión de Regulación de Energía y Gas (CREG) 1995; Comisión de Regulación de Energía y Gas (CREG) 1997a).

3. Optimization model

The decision maker seeks to design a pricing mechanism of cross-subsidies in which contributions are equal or greater than the subsidies, minimizing the need for budget subsidies as defined in equation (1). Define budget subsidy (2) as the difference between the subsidies and the contributions. This represents the amount given by the government to cover the deficit to finance the subsidies. Prices for the subsidized sector (3) are reduced by a subsidy factor making them lower than the cost of supply; whereas, prices for the contributing sector (5) are increased by a contribution factor making them greater than the cost of supply. The decision variables are subsidy factors and contribution factors for every decile in every region. This problem is subject to restrictions regarding subsidy factors (7-8), contribution factors (9-10). Equation 8 guarantees the subsidy factor received by a group in decile i is greater or equal than that of group in decile $i+1$; whereas (10) guarantees contribution factor for group in decile $j+1$ is greater than that for group in decile j . Aspects of equity and social responsibility are incorporated in (8) providing greatest subsidy to the poorest income group and in (10) by seeking a greater contribution from the wealthier income groups.

A general formulation for this problem is presented below:

$$\text{Min (Budget Subsidy)} \quad (1)$$

Where:

$$\text{Budget Subsidy} = \text{Subsidy} - \text{Contributions} \quad (2)$$

$$P_{S_{ik}} = CS_{S_{ik}} (1 - \alpha_{S_{ik}}) \quad (3)$$

$$\text{Subsidy} = \sum_k \sum_{i=1}^m U_{S_{ik}} Q_{S_{ik}} (CS_{S_{ik}} - P_{S_{ik}}) = \sum_k \sum_{i=1}^m U_{S_{ik}} Q_{S_{ik}} CS_{S_{ik}} \alpha_{S_{ik}} \quad (4)$$

$$P_{C_{jk}} = CS_{C_{jk}} (1 + \beta_{C_{jk}}) \quad (5)$$

$$\text{Contributions} = \sum_k \sum_{j=1}^n U_{C_{jk}} Q_{C_{jk}} (P_{C_{jk}} - CS_{C_{jk}}) = \sum_k \sum_{j=1}^n U_{C_{jk}} Q_{C_{jk}} CS_{C_{jk}} \beta_{C_{jk}} \quad (6)$$

Subject to

$$0 \leq LB_{S_{ik}} \leq \alpha_{S_{ik}} \leq UB_{S_{ik}} \leq 1 \quad (7)$$

$$\alpha_{S_{ik}} \geq \alpha_{S_{i+1,k}} \quad (8)$$

$$0 \leq LB_{C_{jk}} \leq \beta_{C_{jk}} \leq UB_{C_{jk}} \quad (9)$$

$$\beta_{c_{j+1,k}} \geq \beta_{c_{jk}} \quad (10)$$

Notation:

- $\alpha_{S_{ik}}$: Subsidy factor for subsidized group i in region k .
- $\beta_{c_{jk}}$: Contribution factor for subsidizing group j in region k .
- C_{jk} : Contributor group j in region k .
- $CS_{S_{ik}}$: Cost of supply for subsidized group i in region k per Kwh.
- $CS_{C_{jk}}$: Cost of supply for subsidizing group j in region k per Kwh.
- LB : Lower bound.
- $P_{S_{ik}}$: Electricity price for subsidized group i in region k per Kwh.
- $P_{C_{jk}}$: Electricity price for subsidizing group j in region k per Kwh.
- $Q_{S_{ik}}$: Average consumption per customer in subsidized group i in region k .
- $Q_{C_{jk}}$: Average consumption per customer in subsidizing group j in region k .
- S_{ik} : Subsidized group i in region k .
- UB : Upper bound

The problem formulated in (1) is an L.P. problem assuming cost of supply, number of users and average consumption quantity are given for each group. This problem is easy to solve to optimality by available LP software. It is important to highlight that establishing bounds on restrictions (7) to (10) requires consensus among different stakeholders including politicians, energy planners and various consumer groups. These groups may have conflicting objectives, i.e. subsidized groups seeking maximization of subsidy factors and subsidizing groups seeking minimization of contribution factors. It is worth mentioning that the proposed model can be applied to other public services to design a cross-subsidy mechanism for a system consisting of m subsidized categories and n contributing categories having different cost of supply.

4. Characteristics of the sector during the study period.

Residential group 1 represents 24% of residential customers according to figure 1; whereas groups 2 and 3 represent 40% and 25% respectively. Approximately 95% of residential customers received subsidies from the system during the three year study period. Values in table 1 indicate that subsidized groups grow faster than residential contributors. This growth will most likely upset the balance between subsidies and contributions.

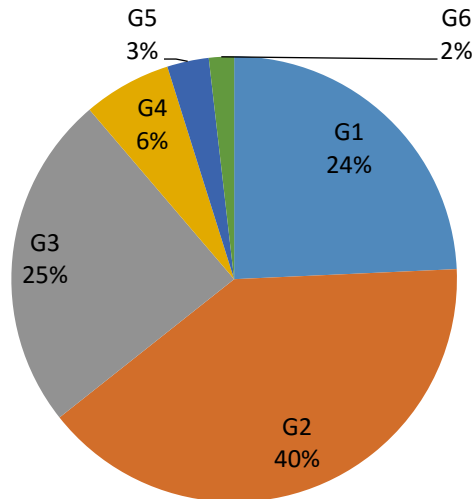


Figure 1. Average distribution of residential customers.

| Year | 2005 | 2006 | 2007 |
|-------------------|---------|---------|---------|
| G1 | 1688190 | 2036695 | 2319139 |
| G2 | 3158880 | 3269392 | 3543892 |
| G3 | 1978779 | 1953378 | 2144513 |
| G4 | 497920 | 500839 | 593237 |
| Total Subsidized | 7323769 | 7760304 | 8600781 |
| G5 | 235417 | 244844 | 273781 |
| G6 | 135190 | 142652 | 175451 |
| Total Residential | 7694376 | 8147800 | 9050013 |
| Industrial | 75967 | 71370 | 77848 |
| Commercial | 634042 | 624852 | 693940 |
| Government | 56249 | 50352 | 48943 |
| Others | 27111 | 27112 | 29906 |

Table 1. Subscribers per group per year.

Average electricity prices for subsidized groups exhibit the correct behavior according to the design presented in the previous section: they are lower for group 1 and increase for the other groups, Table 2. Electricity prices for contributing residential sectors during two years are greater for customer type 5 than for customer type 6. The opposite behavior is expected according to equity principles because customer type 6 is the most affluent group.

| Year | G1 | G2 | G3 | G4 | G5 | G6 | Industrial | Commercial | Others |
|---------|------|------|------|------|------|------|------------|------------|--------|
| 2005 | 0.12 | 0.14 | 0.18 | 0.19 | 0.22 | 0.21 | 0.14 | 0.18 | 0.16 |
| 2006 | 0.11 | 0.13 | 0.16 | 0.17 | 0.20 | 0.19 | 0.13 | 0.16 | 0.15 |
| 2007 | 0.10 | 0.12 | 0.14 | 0.16 | 0.17 | 0.17 | 0.08 | 0.11 | 0.09 |
| Average | 0.11 | 0.13 | 0.16 | 0.17 | 0.20 | 0.19 | 0.11 | 0.15 | 0.13 |

Table 2 Average electricity price \$/Kwh (Constant US\$ for 2007)

| Year | G1 | G2 | G3 | G4 | G5 | G6 | Industrial | Commercial | Government | Others |
|---------|--------|--------|--------|--------|--------|--------|------------|------------|------------|---------|
| 2005 | 168.11 | 141.92 | 174.16 | 219.74 | 286.48 | 437.24 | 13926.52 | 886.32 | 2136.70 | 4995.69 |
| 2006 | 148.11 | 138.34 | 171.81 | 217.15 | 273.56 | 417.93 | 15094.47 | 923.04 | 2216.42 | 4724.65 |
| 2007 | 124.83 | 134.58 | 167.36 | 206.48 | 255.91 | 360.79 | 19379.03 | 1101.82 | 3949.80 | 6411.87 |
| Average | 147.02 | 138.28 | 171.11 | 214.45 | 271.98 | 405.32 | 16133.34 | 970.39 | 2767.64 | 5377.40 |

Table 3. Average electricity consumption per subscriber (Kwh per month)

Average consumption (table 3) for all subsidized sectors is below the subsistence level of 200 Kwh per month (Comisión de Regulación de Energía y Gas (CREG) 1995; Comisión de Regulación de Energía y Gas (CREG) 1997a). However, during two years average consumption for group 1 is higher than that of group 2. This may indicate overconsumption due to low electricity prices. Average electricity consumption in residential sectors increases as one moves up in the social groups. Average consumption for residential customers in group 6 is more than twice the consumption for group 1. Industrial and commercial demands are also increasing during the study period at a higher rate than residential consumption.

| Year | G1 | G2 | G3 | G4 | G5 | G6 | Industrial | Commercial | Government | Others |
|---------|-------|-------|-------|-------|-------|-------|------------|------------|------------|--------|
| 2005 | 22.42 | 19.35 | 23.09 | 28.50 | 35.57 | 53.57 | 1065.61 | 86.30 | 240.03 | 537.58 |
| 2006 | 19.54 | 18.27 | 21.86 | 26.99 | 32.48 | 49.12 | 1122.67 | 85.29 | 238.07 | 484.12 |
| 2007 | 15.67 | 16.54 | 19.75 | 23.91 | 28.16 | 39.48 | 937.23 | 72.26 | 226.64 | 421.78 |
| Average | 19.21 | 18.05 | 21.57 | 26.47 | 32.07 | 47.39 | 1041.84 | 81.28 | 234.91 | 481.16 |

Table 4. Average electricity bill per subscriber per month in USD.

Table 4 presents average electricity bill per subscriber per month in constant USD for 2007. There is no much difference in the average bill between groups 1 and 2 despite the subsidy level each group receive is different, as reported in table 5. Group 1 receives on average a subsidy of 41%; whereas group 2 receives a subsidy of 29%. Industrial bill is the highest making them the more important contributors. This sector has the highest consumption of all (Table 3) distributed among only approximately 75.000 clients (Table 1). Although the contribution per industrial client is almost 20% (table 6) the average bill per client is still high. In countries such as China (Liu & Li 2011) and Brazil (Voll et al. 2003) industrial customers receive electricity subsidies to make products from the sector more competitive. Contributions from the commercial sector are approximately 24%.

| Year | G1 | G2 | G3 |
|---------|--------|--------|--------|
| 2005 | 0.4081 | 0.2948 | 0.0973 |
| 2006 | 0.3954 | 0.2953 | 0.0932 |
| 2007 | 0.4311 | 0.2795 | 0.0855 |
| Average | 0.4116 | 0.2899 | 0.0920 |

Table 5. Subsidy factor per group.

| Year | G5 | G6 | Industrial | Comercial | Others |
|---------|--------|--------|------------|-----------|--------|
| 2005 | 0.1814 | 0.1768 | 0.2034 | 0.2308 | 0.0185 |
| 2006 | 0.1813 | 0.1750 | 0.2011 | 0.2347 | 0.0156 |
| 2007 | 0.1846 | 0.1763 | 0.2117 | 0.2539 | 0.0163 |
| Average | 0.1825 | 0.1761 | 0.2054 | 0.2398 | 0.0168 |

Table 6. Contribution factor per group.

Table 7 reports the percentage of total subsidy covered by budget subsidy. The cross-subsidy system given the actual subsidy and contribution factors reported in the two tables above fails to collect enough funds to avoid the need for budget subsidy. The budget subsidy from the government represents on average approximately 15% of the total subsidy amount after discounting all contributions. The system on its own given the current contribution levels is not able to provide enough to give subsidies to 95% of residential customers at the actual subsidy levels reported in table 5.

| Year | % Budget Subsidy |
|------|------------------|
| 2005 | 15.14 |
| 2006 | 15.71 |
| 2007 | 13.00 |

Table 7. Percentage Budget Subsidy.

Table 8 presents maximum disposable household income and average disposable income per decile obtained from census data for year 2005 with forecast for years 2006 and 2007 (Departamento Administrativo Nacional de Estadísticas 2006). Average bill values reported in this table are obtained from table 4. Customers in the 7th decile represent customers in group 4 which are only required to cover the cost of supply. The last column in this table computes the percentage value of average electricity bill over average income. This percentage is almost 90% for customers in the first income decile, 6% for customers in the 7th decile and 3% for customers in the 10th decile. Information presented in tables 7 and table 8 about the average budget subsidy and the percentage value of average electricity bill over average income, indicate that not only subsidies are not enough to help poor families but the government is diverting financial resources that could be used to fund other social programs to finance this deficit.

| Decile | Total Homes | Max. Income (USD) | Average Income (USD) | Avg. Bill | % (Avg Bill/Avg Income) |
|-----------|-------------|----------------------|-------------------------|-----------|----------------------------|
| Decile 1 | 1.114.223 | 64.15 | 21.59 | 19.21 | 88.98 |
| Decile 2 | 1.114.352 | 124.10 | 95.24 | 18.05 | 18.95 |
| Decile 3 | 1.114.815 | 182.84 | 154.75 | 18.05 | 11.66 |
| Decile 4 | 1.114.365 | 231.42 | 206.69 | 18.05 | 8.73 |
| Decile 5 | 1.113.203 | 291.82 | 261.52 | 21.57 | 8.25 |
| Decile 6 | 1.114.972 | 384.92 | 337.96 | 21.57 | 6.38 |
| Decile 7 | 1.115.437 | 509.15 | 442.93 | 26.47 | 5.98 |
| Decile 8 | 1.114.106 | 697.67 | 595.60 | 32.07 | 5.38 |
| Decile 9 | 1.114.820 | 1.076.45 | 856.27 | 47.39 | 5.53 |
| Decile 10 | 1.114.555 | 22.428.45 | 1.982.39 | 47.39 | 2.39 |
| Total | 11.144.850 | | | | |

Table 8. Distribution of homes per household income in deciles.

5. Alternative allocation methods for subsidies and contributions.

The model presented in section 3 is used together with the data presented in section 4 to identify 4 alternative allocation methods that provide full subsidy to customers in the first income decile and increase the subsidies given to all subsidized groups. Optimal factors reported in Tables 9 and 10 guarantee the elimination of budget subsidies but require regulatory approval to increase subsidy and contribution factors. Subsidy factors (S) are given as negative quantities in brackets to distinguish them from contribution factors (C). Contribution factors and prices for industrial, commercial and other customers are assumed to stay at the average values reported in section 4. It is desired in the design of the new allocation alternatives to promote social equity that the percentage of the average electric bill over the average income per group stays close to that for decile 7 (which represents group 4). All alternatives generate a surplus which can be used to fund a solidarity fund or other social programs. The higher the contribution factors the higher the surplus since subsidy factors for all alternatives are equal and staying at their lower bounds. Alternative IV is the recommended alternative since all the contribution factors stay the closest to the target value of the percentage of the average electric bill over the average income per group for decile 7. It is important to highlight that the model is able to identify different alternatives depending on the target design desired by policy makers and various stakeholders involved in the design process.

| Decile | Average Income (USD) | Alternative I | | | Alternative II | | |
|-----------|----------------------|---------------|-----------|-------------------------|----------------|-----------|-------------------------|
| | | S or C | Avg. Bill | % (Avg Bill/Avg Income) | S or C | Avg. Bill | % (Avg Bill/Avg Income) |
| Decile 1 | 21.59 | (1.00) | 0.00 | 0.00 | (1.00) | 0.00 | 0.00 |
| Decile 2 | 95.24 | (0.80) | 5.49 | 5.77 | (0.80) | 5.49 | 5.77 |
| Decile 3 | 154.75 | (0.70) | 8.24 | 5.33 | (0.70) | 8.24 | 5.33 |
| Decile 4 | 206.69 | (0.60) | 10.99 | 5.32 | (0.60) | 10.99 | 5.32 |
| Decile 5 | 261.52 | (0.50) | 13.75 | 5.26 | (0.50) | 13.74 | 5.25 |
| Decile 6 | 337.96 | (0.40) | 16.48 | 4.88 | (0.40) | 16.48 | 4.88 |
| Decile 7 | 442.93 | 0 | 26.47 | 5.98 | 0 | 26.47 | 5.98 |
| Decile 8 | 595.60 | 1.50 | 68.67 | 11.53 | 0.70 | 46.70 | 7.84 |
| Decile 9 | 856.27 | 2.00 | 82.41 | 9.62 | 1.00 | 54.94 | 6.42 |
| Decile 10 | 1982.39 | 3.00 | 109.88 | 5.54 | 3.30 | 118.12 | 5.96 |

Table 9. Optimal solutions for alternative allocations I and II.

| Decile | Average Income (USD) | Alternative III | | | Alternative IV | | |
|-----------|----------------------|-----------------|-----------|-------------------------|----------------|-----------|-------------------------|
| | | S or C | Avg. Bill | % (Avg Bill/Avg Income) | S or C | Avg. Bill | % (Avg Bill/Avg Income) |
| Decile 1 | 21.59 | (1.00) | 0.00 | 0.00 | (1.00) | 0.00 | 0.00 |
| Decile 2 | 95.24 | (0.80) | 5.49 | 5.77 | (0.80) | 5.49 | 5.77 |
| Decile 3 | 154.75 | (0.70) | 8.24 | 5.33 | (0.70) | 8.24 | 5.33 |
| Decile 4 | 206.69 | (0.60) | 10.99 | 5.32 | (0.60) | 10.99 | 5.32 |
| Decile 5 | 261.52 | (0.50) | 13.74 | 5.25 | (0.50) | 13.74 | 5.25 |
| Decile 6 | 337.96 | (0.40) | 16.48 | 4.88 | (0.40) | 16.48 | 4.88 |
| Decile 7 | 442.93 | 0 | 26.47 | 5.98 | 0 | 26.47 | 5.98 |
| Decile 8 | 595.60 | 0.25 | 34.34 | 5.77 | 0.25 | 34.34 | 5.77 |
| Decile 9 | 856.27 | 0.30 | 35.71 | 4.17 | 0.60 | 43.95 | 5.13 |
| Decile 10 | 1982.39 | 0.50 | 41.21 | 2.08 | 3.30 | 118.12 | 5.96 |

Table 10. Optimal solutions for alternative allocations III and IV.

6. Conclusions

After restructuring of its electricity sector in 1994 Colombia implemented a policy of cross-subsidies in electricity tariffs. Cross-subsidies are often questioned on grounds of promoting over consumption and missing the target population, but they can be used by the government to achieve goals of universal access, equity and national development. Then, tariffs are usually set lower than the cost of supply for the subsidized groups and higher for the subsidizing groups. This pricing strategy creates cross-subsidies. Regulations in Colombia allowed poor families living in less affluent neighborhoods to receive a maximum subsidy of 50%. The system is financed by contributions from more affluent residential customers, industrial, commercial and other sectors.

Most recently available census data for 2005 indicates that for poor families in the first income decile electricity bill represents 90% of average household disposable income, 6% for customers in the 7th decile and 3% for customers in the 10th decile. The cross-subsidy system given the actual subsidy and contribution factors at the time of this research fails to collect enough funds to avoid the need for budget subsidy. The budget subsidy from the government represents on average approximately 15% of the total subsidy amount after discounting all contributions. The system on its own given the current contribution levels is not able to provide enough to give subsidies to 95% of residential customers. Then, information about the average budget subsidy and the percentage value of average electricity bill over average income, indicate that not only subsidies are not enough to help poor families but the government is diverting financial resources that could be used to fund other social programs to finance this deficit. The optimization model presented in this paper identifies alternatives that can provide full electricity subsidy to poor families in the first income decile, increase the subsidy factors, make average bill more equitable and eliminate the need for budget subsidies but require increasing the limits on subsidy and contribution factors set forth by current regulations. A joint effort involving policy makers and different stakeholders is needed to identify the best desired features representing constraints for the proposed model presented here to design an electricity policy directed to help poor families in need.

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Multidimensional Poverty Index (MPI) in Agricultural Household in Indonesia

Ratna Rizki Amalia
Statistics Indonesia, Central Jakarta, Indonesia

Kadir
Statistics Indonesia, Central Jakarta, Indonesia

Abstract

Poverty is one of the central issues in development program of Indonesia. In 2014, more than 27 million people in Indonesia live in poverty and over than 60 percent of them lived in rural areas which heavily rely on agriculture sector as their livelihood (BPS-Statistics Indonesia, 2014). This fact confirms that poverty eradication in agriculture is the key factor in reducing poverty in Indonesia. Data and information about poverty is really needed in the fight against poverty. However, the formal poverty data that available counts only direct monetary income and neglects other qualitative dimensions of poverty like health and education. Therefore, researchers are interested in measuring Multidimensional Poverty Index (MPI) in agricultural household in Indonesia. This research used secondary data from the latest 2014 National Social Economic Survey of Indonesia (SUSENAS 2014). Total number of sample in this research was 285,400 household. The measurement of MPI was conducted exploratory by factor analysis. Data was entered and analyzed by using Statistical Package for Social Science (SPSS) computer program. The analysis was performed on the 33 provinces in Indonesia. Based on the result of analysis, we found that, in term of multidimensional poverty, poverty in Indonesia is also an agricultural phenomenon. Multidimensional Poverty Index (MPI) in agricultural household in Indonesia was 0.30 and much higher than MPI in non-agriculture sector that was only 0.11. More than 60 percent of people in agricultural household were considered as poor multidimensionality. Intensity of poverty in agriculture household was 0.50. It is also much higher than intensity of poverty in non-agricultural sector and intensity of poverty in total that were 0.45 and 0.48, respectively. Therefore, we conclude that any effort to address poverty must consider the central place of agriculture in Indonesia. Besides, poverty reduction must not only focus on improving income of farmers but also on boosting the capability (level of health and education) of poor people.

Key: poverty, agricultural household, multidimensional poverty, MPI

Responsibilities based on compensating and empathy as acknowledgement: A philosophical view of the duties of every individual living in developed countries

Sini Paakkinen

University of Turku Graduate School

Abstract. Thomas Pogge, a German philosopher, says that we all, living in developed countries, are individually responsible for global poverty. In fact, according to Pogge, we are part of committing a crime against humanity, because we actively produce the ongoing world's political and economic order which oppresses the people living in poverty. So, for Pogge, an individual has a huge moral weight on his shoulders. Pogge's theory of global poverty has a huge amount of profit (the critic against the World Bank, questioning the political and financial cooperation between the developed countries and the dictators of the underdeveloped countries etc.), but it has been criticized for making a too strong connection between an individual and the political decisions of his country. My hypothesis is that we do have a moral duty to compensate the oppression of the poor but the moral guilt is not so strong than that of Pogge's theory. I also suggest a new content when dealing with poor people's human rights.

The leading demand for my research is the capability to empathy. The existing theories of the questions arising from poverty 1) are related to a too strong individual responsibility and demand to compensate, 2) are partly denying the responsibility leaving the responsibility to help only in the good will of every person ("someone should help"), or 3) the theories are denying that that there is any responsibility at all. There needs to be a theory that will complete the conversation keeping the individual responsible even to compensate without indicating him a huge moral weight. I focus on theorizing the moral relationship and causality of individual and collective. In addition to a duty to compensate this research highlights empathy (understood here as a sort of acknowledgement) as the basis for the affluent individual's responsibility for global poverty and brings out the insufficiency of the concept of human rights.

Global poverty – collective responsibility – empathy – human dignity – human rights – individual responsibility

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1. Introduction

According to the report of the FAO 2015 there are 795 million chronically undernourished human beings in the world.¹ Every day 17 000 children under the age of five die of poverty related causes such as hunger or diseases for which we already have a cure.² There are reasons for poverty that have their roots in historical episodes such as colonialism but the truth is that the diversity among people is greater than ever and the poor are still poor – or even poorer. In this forum, in Poverty and Social Protection Conference 2016, it might seem as self-evident that affluent people have a duty to help (or compensate) the poor³. This, however, is not the only way neither the most common way of dealing with the subject. Can it really be claimed that affluent people, let's say an individual living in country such as Finland, have a duty to try to end global poverty? Some who deny this kind of responsibility have national claims, where nationalism is used as to describe the more important role of one's fellow citizens needing help too, or in a way that performs the poor countries blameful for their own poverty. It is also been claimed that the problem of global poverty is so enormous that we, at least as individuals, cannot really have any impact on it. The most "optimist" ones say that poverty is something that is already diminishing in a way that needs no more assistance. In my research I will discuss on collective and individual moral responsibility, poverty as a structural and individual moral problem and the role of empathy. Empathy is here used as a form of acknowledgment: understanding that there are other entities and they are having the essence of human beings. I claim that this is also the basis for the justification of human rights.

According to Thomas Pogge the strongest moral duty is the duty not to harm others: but the poor are harmed by structures and other people. He says that we, people living in affluent countries, are taking part of maintaining and reproducing the on-going global economic and political order. This order benefits us but harms the poor unduly and this is why we are responsible for global poverty and all its effects, such as the deaths of millions of people. In fact, Pogge is saying that we are being part of a crime against humanity.⁴ This means that Pogge is addressing individuals the responsibilities based on the actions made in their name by a collective. I will discuss this further by demanding a more clear distinction of collective and individual responsibilities. I also criticize the way the concept of human rights is used by him and other (such as political and legal) quarters as inflicting mainly negative duties.

Poverty is strongly structural global problem, but it also raises essential questions in individual moral level: what does grave poverty mean for an individual living in affluent country? I will claim that because of our ability to empathy we are responsible for striving to reduce poverty. I also criticize the way poverty is to dealt with in affluent countries as a target of self-perspective empathy instead of focusing on being other-oriented. Poverty is not in us, it is not our every day life and not part of our daily decision making, so it cannot be analyzed by our popularized, Western moral norms. This is the only way we can identify ourselves as morally good agents, truly empowered ones, and also aim to assist the poor to empower themselves. The common practice of not using our capability to empathy is not justifying itself. Poverty is, such as slavery once was, actualized in structures but also in individuals' acts. Global poverty is violating human rights and human dignity, but its still going existence and the publicly articulated insensitivity of affluent people in accordance to its causes is also showing an alarming threat to the morality and civilization of humanity. The indolence and arrogance of the public insist not only poverty and suffering of

¹ The State of Food Insecurity in the World. Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress. The Report of FAO, IFAD and WFP (2015), p. 4.

² Levels & Trends in Child Mortality. Report 2014, Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation, p.2.

³ Using the word 'poor' is been criticized as not able to describe the content properly. It is still unclear what would be a better option: 'the global South', 'people living in underdeveloped or developing countries'..?

⁴ Pogge, Thomas (2002): Global Poverty and Human Rights.

millions of human beings, mostly of women and children, but it also ignores our own part of producing this misery and inequality. This should be taken into account as a real moral failure when praising for example the level and content of Finnish education (which does not include any real discussion of global poverty).

2. Negative duty not to harm others

The human rights of the poor people living in underdeveloped countries do not actualize. There is no way to deny that. There still remains the question of what should this mean for other people? Are there duties towards poor, and if so, how are these duties to be explained?

Human rights are defined as inalienable, belonging to every human being. What are rights then? We usually share a common understanding of rights as demanding something: if there is a right, then there is a demand. But to whom? Does it only mean the right not to be violated, or is it the demand for positive actions that ensure that right?

It is not always a human rights violation when someone, for example, dies or lacks an adequate shelter even though his or hers human rights (a right to live, have a shelter etc.) do not fulfill. When people die in hurricane we do not say that there has necessary been a human rights violation but a sad incident. Human rights are being violated when they are publicly denied or prevented – such as in the case of slavery or genocide. If we accept Pogge's theory about the social economic and political order as harming the global poor we can see also there a human rights violation. As Thomas Pogge puts it: "the poor do need help, of course. But they need help only because of the terrible injustices we have been inflicting upon them"⁵. For Pogge the most strongest and demanding moral duties are negative duties not to wrong (unduly harm) others. In taking part of the global order, by doing business with juntas on the natural resources of underdeveloped countries, by accepting such regimes as TRIPS (Trade-Related Aspects of Intellectual Property Rights) or by giving loans for dictators, we violate our negative duty. This all harms the poor people unduly giving us and the leaders of underdeveloped countries all the effort. By violating our negative duty we are responsible for compensating our actions.⁶ The question still remains: Can that be all? If poor people are to be given aid only in the case where we are responsible for compensating – but not for example of cases where the misery is not our fault – does that not miss something of the idea of human dignity?

3. Collective and individual moral responsibility

According to Thomas Pogge, we are individually morally responsible for global poverty because we participate in the global financial and political order which oppresses the poor. So, just by being a member of a collective makes us as individually guilty. I do not agree on this and I see there is a meaningful difference between an individual being individually morally guilty and for a member being guilty for its collective's actions. For an individual it makes a huge difference if he is guilty because of the actions made by his collective or because of the actions made by himself. Even though the actions of collective can make also an individual guilty, it is not person's individual guilt. Are we really to be blamed of global poverty individually?

Thomas Pogge has described the connection between individual and collective differently. The problem is that his theory is based on human rights, and he sees human rights violations as public violations, not made by individuals in individual situations but made publicly by collectives.

⁵ Pogge, Thomas (2002): World Poverty and Human Rights, p. 30.

⁶ Ibid., 138.

But he then lines it to be the fault of every individual precisely that they uphold and reproduce the global poverty by taking part of the on-going global financial and political order. It has been suggested that this role of an individual is just too demanding. This is why it kind of loses its power, even though the connections behind theory are important and efficiently proved. Pogge is for sure trying to make something good to happen (and has already done), but in the real world, holding in mind the real people and real individuals' lives, we should try to make a change in a way that people accept and are willing to actualize. They will not accept that they should take individual moral responsibility for actions made collectively – and this should not be demanded.

I have an example of the relation of individual moral responsibility and collective moral responsibility that will identify the difference and the meaning for the mental level of the relation. Few years ago a Finnish bishop apologized for what the Church had done to the Saami people in 1930 's.⁷ His statement consists three points: He said he feels shame of what happened. As a holder of his vacancy as a bishop he wanted to disclaim himself from the actions of the church. He also wanted to apologize for what the Church had done. I do not elaborate here if the bishop of Oulu (Oulu is a city in Finland) was in a position high enough to act and apologize in the name of the Church. Despite of what we might answer to that we can still analyze the statement further because it captures what is meaningful for our purposes. The bishop says he feels shame of what has happened even though he did not take part of the action himself. In fact, he was not even born yet when the actions against the Saami people were done. So, the shame is something that comes from being a member in the collective that did it. By saying that he wants to disclaim himself from the unjust actions he makes a distinction of his own intentions and the intentions of a collective. Finally he apologizes in the name of himself and the collective. This all seems rational to us. We might think this is what is right for him to do. The actions done 80 years ago were wrong and shameful but apologizing for them is definitely a right thing to do. Why would it be different in the case of global poverty? Our main moral shame is based on the collective shame. We have also means to compensate our individual acts. This should be a way to feel collective proud.

The bishop of Oulu disclaimed himself from the acts made by the Church in 1930 's. So, he feels he isn't morally on an individual level responsible for the injustice. I might suppose this can be widely agreed. But in case of global poverty we are in a different situation. Historically poverty is not just something that happened in past, it is actual right here and right now. And because of the strong inequality and the fact that poor people are even poorer than they used to be, we have to face poverty today.

As easily understood, there cannot be collective action without individuals actualizing it. But as described earlier, collective act is not just a collection of individual acts, it is something more. Here I strongly agree with Isaacs. According to him collective moral responsibility cannot be analyzed in terms of individual responsibility. Justifying a collective level of moral responsibility is consistent with the thought that there are also individual moral responsibilities arising from members individual actions in the collective. Isaacs has argued that "if we try to give a thoroughly individualist account of these actions, we do not only sacrifice collective moral responsibility in collective cases, we also leave ourselves unable to provide an adequate account of individual responsibility".⁸ This is something that is also a meaningful part of understanding the questions concerning responsibility in global poverty. If we only think about what one person living in affluent country is doing and how is it directly affecting the poor, we will be confused. I do know, that buying cheap clothes made in huge factories in Bangladesh is affecting someone. I do know that the way it affects is also negative. But would it really differ if I did not buy those clothes? If we try to understand this situation as only as individualistic, we might not find it (at least very) bad. This is inconsistent with the fact that producing clothes in poor countries by children working in awful conditions is seen as a huge moral problem. Seeing it only as an act made by a collective

⁷ In a conference held in 2012 a bishop called Samuel Salmi apologized for the wrongs the Church had done against the Saami people.

⁸ Isaacs, Tracy (2006): "Collective Moral Responsibility and Collective Intention", 63.

capable of acting according to its own will (intention, etc.) will diminish the responsibility of the individual. This would basically mean that everything that is done in the name of collective is outside the level of individual's moral responsibility.

As citizens of democratic country our part of producing global poverty is bigger than of those people who do not have a real chance to make decisions. The democratic nation is acting in our name, its being is on us. We are affecting its politics through elections where we all have a equal vote. In last years the percentage of those taking part of the parliament elections in Finland has been something like 65-70 percent of those who has the right to vote. This means that 30-35 percent of the people are giving their justification for the party in lead no matter which one it is. We all have an opportunity to affect the policy of our government – if we choose not to use that right it does not lead as to be free from responsibilities that arise from the outcomes of the actions made by our nation. By living in and benefiting from our country we show our commitment to it. It is also widely accepted (recognizing the laws, collecting money for children's hospital, helping the war veterans). Our role as citizens is not only one-sided, we are living in a reflecting way: our actions affect the policies of our representatives. This does not always mean that things are really changing but that they potentially could change. And it is not that there should be an initiative made by citizens or a result of voting that could be counted as affecting. We react and reflect many things in our daily life: the researchers investigate how we are doing when the alcohol tax is increased, and then this is to be compared with the political decisions and financial effort, and possible improvements are to be discussed. The same is with education, work, leisure etc. This is why we as individuals have not only collective natural responsibility but also a collective institutional responsibility, when our nation has a policy that affects negatively the lives of people living in poverty. It is a strong enough claim to make us as meaningful members of a collective and being responsible for its (moral) decisions.

4. Is that all?

Most of us are ready to admit that breaking a negative duty not to harm anyone is stronger than a positive duty to help. Even so, making a hierarchical statement is not the same as explaining what we are expected to do or what our responsibilities in overall are. I do not agree that we have such a strong individual responsibility of producing poverty as Pogge suggests. But I do claim that we have individual moral responsibility for striving to reduce poverty and its causes. My claim is based on empathy as a way of acknowledgement.

We, individuals living in affluent countries, are to be seen as moral agents. We are capable of doing decisions that are (also) ethically meaningful. We have intentions and capabilities. We, as moral agents, also have ability to empathy: we can acknowledge the global poverty, its causes and its roots. We can acknowledge that there are people: children, women and men, who have a similar existence to ours and who have human rights. We also know that they are suffering in a way that will affect their life in a serious way, in most cases, it will lead to death. Acknowledging this and the position we have ourselves - being affluent, living relatively good life, having even luxury products - we should also understand our position as having a duty to balance the situation. We cannot just enjoy our lives which are based on historically wrong acts, unjust global political and financial order, being arbitrary born in some specific country and so on. If we are moral agents (which is the postulate of every autonomical person), we have to do something for global poverty. This is how we do not only make our best to better the lives of other people – it is a way to empower ourselves too. Doing our duty will make us empowered because we have taken the actions that justice requires and through that we really show our full potential.

If human rights are first and foremost “weapons in combining certain evils that human beings inflict upon one another”, as Rainer Forst has written, they do not address a thing that has

non-relative value as being something that has to be secured no matter what. This distinguishes us from the value of human dignity, which is to be seen as valuable in itself. So the rights (as used in most cases) that protect human dignity miss the essential point of their original meaning if they are used only as provoking negative duties not to harm them. I will claim that empathy (as a way of acknowledgement) is a solution for this problem. Acknowledging that there are other beings that have a similar level of understanding, mind, etc. that I as a human being have, and that this arbitrary gotten essence has very different circumstances to be actualized means that we also have positive duties towards each other.

In the case often used as an example when discussed about positive and negative duties, a person is sinking under the surface in a pool. Let's say here a four-year-old girl is drowning in a water pool. She got into the water when a group of adults tried to run to the bus and they just pushed the girl away because she was on their way. The girl fell into the water and because she could not swim she started to drown. Few of the adults noticed the situation and one of them told about it to the others. There were also other people around who could have easily helped. I claim that what is here important is that the girl will be saved because we all acknowledge that something bad was happening to her. It is everybody's duty to try to help her and then, when the girl is saved, it is time for the next important thing: to see whose responsibility it was in the first place. The most wrong and bad thing would have been that the little girl would have sunk to the pool and lost her life, not that someone aimlessly pushed her there or that there was many other people too that could have helped her.

Many moral questions can be traced to institutional or individual (personal) ones, and the results of the conversation differ from the point of view that has been taken. Global poverty cannot be seen as only one-sided. And when regarding it from an individual point, it does not really matter (in the context of morality) whether the decision of an individual really makes a difference to the overall picture of the existence of global poverty. When a person is in front of a moral dilemma it is all about his or her decision making. If a person understands that there are persons that lack the essential human rights and that he or she is in a position very different than that of the poor ones, but then chooses not to care, he or she is really making a decision that can be seen as morally dubious. It should be dealt with a real concern to see poverty as a utilitarian manner. If we think that poverty is such a huge problem that our individual acts do not really have an impact on it as an overall phenomenon, we make a grave claim concerning human rights. If we really say that our impact not to be as important to be done, we do not give value for individual lives and welfare: even a little improvement is an improvement and one saved life is everything for that person. Denying or undervaluing this is a step we do not really want to take.

I claim that no universal normative judgements of the level of sacrifices one should make can be defined. We have different reasons for why we run to the bus: one might need to get to the hospital where her girl is just brought after a car crash, one can be just hurrying to get to the sales. Or one that did see what happened had a baby in his arms and that is why it was difficult even though not possible for him to help. When making individual decisions individual context counts. But if we are calling ourselves moral agents we have to demand us to always try to have acknowledged intentions, and those intentions are something that we are responsible for. Being able to feel empathy is the basis for development work in the poor countries too – although its content then differs from the way I have used the notion of empathy in this text. It is also crucial not to let ourselves out of the hook too easily: when expanding the way of using empathy as an instrument in development work we should be other-oriented and the process should not be realized from our own point of view. It is necessary not to try to place our self in a position that one is having but to aim to understand one in his or her context. This is the way that we might be able to be part of empowering the poor, not actualizing a role of a crusader who has his own values and practices that will cause more suffering than wellbeing.

The present way of dealing with global poverty for example in Finland is to distance it – not

only geographically but what is even more important, psychologically. This is even so it is just psychologically that we can really acknowledge our universally mutual essence as individuals having universal human rights – and dignity.

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Role of College Based Social Organizations in Poverty Alleviation through Social Empowerment and a Case Study: Kashi Utkarsh

Dhanendra Kumar

Graduate Student
Dept. of Civil Engineering
IIT (BHU) Varanasi, India

Utkarsh Garg

Graduate Student
Dept. of Ceramic Engineering
IIT (BHU) Varanasi, India

Abstract

This paper attempts to talk about the role and impact of college based social organisations on poverty alleviation. A brief introduction of poverty is given to address the whole challenge in detail. Apart from the economic perspective, other aspects of poverty are also discussed here. Fundamental causes and effects of poverty are identified and solutions to tackle those problems are discussed. The concept of social protection and social empowerment is presented to understand the broad dimensions of poverty eradication projects. A brief history of NGOs has been discussed here as the works of these organizations are supposed to be the motivation for students to open such organizations in their institute and work for the social development of the underprivileged sections of the society. The roles of NGOs and these so called college based social organisations have been identified in the global mission of poverty reduction. These organisations generally work in three common sectors, education, women empowerment and sanitation. The background of these areas is also covered. The impact of these areas on poverty and how they will help in our objective is also discussed. In order to completely eradicate this global problem of poverty, members of the United Nations signed the United Nations Millennium Development Goals (MDGs) in 2000. Further to continue these targets, Sustainable Development Goals (SDGs) have been adopted. It is a widely accepted notion that these social organisations are able to reach poor and acknowledge their problems in a better way and resolve them. Some of the social organisations of the top colleges of India have been listed here and briefed about their work. The working methodology of these organisations is discussed in order to understand deeply about their work. These organisations have their impact not only on those poor people but also on the students working in them. The idea of social internship is presented with the help of this paper. At the end a case study of Kashi Utkarsh, a college based social organisation of IIT (BHU) Varanasi, India has been presented. The case study presented reviews the ideas presented in this paper earlier and helps to understand in a better way.

Keywords: *poverty, empowerment, college's social organizations, education, women empowerment, sanitation and Kashi Utkarsh.*

1. Introduction

Poverty is a global challenge faced by all the nations. Different government actions are being implemented to cope with this problem. Work is being done at grassroots levels to eradicate this problem completely. Keeping this in mind, the root causes are being determined to work efficiently. Poverty cannot be defined only in economic terms, hence other dimensions of it are being analysed and being improved. Poverty also gives birth to other problems like unemployment, terrorism, etc. Two types of conditions are seen in case of poverty: unemployment and underemployment. In case of unemployment there is no earning whereas the amount of work is less than the specified minimum and hence the earning is less.

Poverty reduction involves many varying and innovative approaches depending upon the circumstances. But there is a universally accepted notion that development of livelihood depends on communities enjoying good health and access to education irrespective of age, gender and other categories. This is understood well by the NGOs and other organizations including college based social groups. They started focussing on these basic necessities and making them accessible to the reach of each individual.

A huge investment has been made in the sector of education, health, housing, water and sanitation because it has been thought that improvement in these fields will lift people out of poverty.

“To build a nation, build a school.” -Amartya Sen, Nobel Prize-winning economist.

There is a unanimous agreement among the world’s economists that education and literacy are vital for improving the life conditions of the poor. The relation between poverty and education is mutual, i.e. it acts as both cause and effect of lack of education. A little direct connection is also observed between poverty as well as education and the participation in terrorism. Differences due to socio-economic status related inequalities termed as socio-economic gradients, have been observed in educational outcomes in developing countries. Child poverty has more prominent impact and is long lasting. Bane and Ellwod (1986) has estimated that poverty that begins with the birth of child on an average lasts for approximately eight years. High quality early education can give prominent impact on child skill ability as well as intelligence quotient. Knowledge is necessary but not sufficient.

A woman with resources is far better for children and the community. If a woman is educated, it will help in educating her coming generation. Investing in women will yield much more than investing the same amount on men. Women have also proved this fact. They are excelling in this modern world in every sector of endeavour, even performing better than men in many cases.

‘Sanitation is more important than political independence’ – Mahatma Gandhi. A healthy mind can lead you to a healthy body and a much happier life. Every individual has the right to drink clean water and live healthy. In order to spread global awareness about the sanitation and the achievements of sanitation targets sets by MDG, the United Nation had declared 2008 as the International year of sanitation.

Since it is a global challenge, various organizations are joining hands with each other to tackle this problem. The available literature suggest that at any positive rate of growth, the initial inequality rate and the rate at which income poverty drips are inversely related.

According to Sachs (2005), the world's poor people know about the so called development ladder. They are lured by the affluence from halfway around the world. But they are unable to get the first foot on that ladder and hence can't even begin climbing out of poverty. The role of social organizations comes here. They are basically making them aware of their rights. This helps in empowering them and thus stepping out from poverty.

According to, World Bank chief economist Nicholas Stern: *"We should not think only in terms of economic growth when we try to understand poverty reduction. It is vital that we work to empower poor people to participate in the process. And poverty occurs in many more dimensions than income. Hence, we must also recognize a second pillar in the fight for poverty reduction: empowerment. Empowering poor people so that they can participate in economic growth requires investments in health, in education, and in social protection as well as building institutions that enable them to participate in decisions that shape their lives."*

Kashi Utkarsh is such a social organization run by the student of Indian Institute of Technology (Banaras Hindu University) Varanasi, India. It is working with the motive of making people self dependent in the slums of Varanasi. Basic insights into the working and structure of the organisation are discussed here in line with the points carved out in the previous discussion.

2. Poverty and Social Development

According to Amartya Sen, poverty means capability deprivation. Poverty cannot be eliminated only with the help of financial assistance. Every individual has to be empowered to live with dignity in society.

2.1 Poverty

There are many definitions of poverty being put forward till now and many controversies have occurred over it, whether to be defined in the economic terms or in a broader perspective of social disadvantages. Considering the economic point of view, it is totally based on income parameter and hence can be measured with absolute poverty line. While talking of broader definition, "poor" doesn't mean lacking the physical and material assets rather it also depicts capabilities such as social belonging, cultural identity, respect, dignity and education.

The perception regarding poverty has evolved with each decade. By the mid 1980s, the conception of addressing the poverty has begun shifting towards understanding the social and political dimensions of what it means being poor. The work of Amartya Sen and Robert Chambers played a key role in the development of new approaches to poverty. The United Nation has also developed a new index in this regard. The UNDP Human Poverty Index

introduced a multidimensional measure of poverty which incorporates the four dimensions of human life, a healthy life, knowledge, economic provisioning and social inclusion into a composite.

Poverty is not a static situation; rather it's a dynamic process. If a family is in poverty, doesn't mean it will never step out of it. Families keep moving in and out of poverty in a shorter duration of time also, which results in intermittent poverty rather than persistent poverty. Poverty is generated by the dynamic interaction of several factors such as social, economic and various historical forces that transform the personal choices and local realities. However it is observed that the impact of intermittent poverty on child outcome is similar to that of persistent poverty. Families are considered as the primary socializing elements for their wards. Along with providing elements of basic necessities such as food, shelter and clothes, it also transmits cultural and educational values to their children which help them in adapting to societal demands and opportunities. Long term studies on changes in poverty have demonstrated that the factors that move families out of the poverty may differ from those that have lead to poverty. There is no doubt that poverty is clearly a risk factor for children's poor development and also for the limited educational outcomes. It is also possible that it is this risk only that has effect on the later stages of their life, even when the family has stepped out of poverty.

Poverty has also been differentiated as absolute poverty and relative poverty. Absolute poverty has been defined as the absence of financial resources which is required to maintain a basic minimum standard of living. Absolute poverty can be measured on some scale. On the other hand, relative poverty depends on the societal norms in which a person is living. The economic growth is not at all what that matters in reducing poverty. There are several other non income aspects like lack of schools and health care services.

2.2 Millennium Development Goals

In the year 2000 at the Millennium Summit of the United Nations, the then 189 UN members signed the United Nations Millennium Development Goals (MDGs), each goal having specific target and dates for achieving those targets. The MDGs originated from the United Nations Millennium Declaration. The Declaration asserted that every individual has dignity; and hence, the right to freedom, equality, a basic standard of living that includes freedom from hunger and violence and encourages tolerance and solidarity.

The MDGs which we want to focus on in this paper are:

1. Reduce extreme hunger and poverty.
2. Achieve universal primary education.
3. Promote gender equality and empower women.
4. Improve maternal health (5th MDG).
5. Combat HIV/AIDS, malaria and other diseases (6th MDG).

To further the processes set by MDGs, on 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled "*Transforming our world*:"

the 2030 Agenda for Sustainable Development". The Official Agenda outlined the 17 Sustainable Development Goals and its associated 169 targets.

The goals which we want to focus on in this paper are:

1. End poverty in all its form everywhere.
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.

These MDGs and SDGs show that education, gender equality and sanitation are the important aspects of society and are vital for other types of problems also.

2.3 Social Protection

The DAC guidelines on poverty reduction (OECD, 2001) have recognized that increasing growth rates are necessary but not sufficient for effectively tackling the global problem of poverty and vulnerability. It has laid major emphasis on the sustainability, more importantly composition and equitable quality of economic growth. Keeping this in mind for low and middle income nations, the concept of social protection is recognized as an essential instrument in poverty eradication.

The United Nations has also given importance to it. The United Nations Research Institute for Social Development (UNRISD) identifies universal social protection and equity as the central goal of social policy (UNRISD, 2006; Winman et. al. 2007).

Social Protection basically refers to the policies and actions which enhances the capabilities of poor and vulnerable groups to step out from poverty. It enables them to better manage risks and shocks. Social protection incorporates all those vital tools that tackle chronic and poverty induced due to shocks and vulnerability (Wheeler and Haddal, 2005).

Social protection also helps in promoting the empowerment. It directly expands the material assets of poor people and their capabilities. It helps them in improvising their well-being and more broadly their economic activity. Social protection enables the poor and vulnerable section of the society to mobilise their resources and harness the public institutions in a better way to make their inclusion fair in society as well as economy (World Bank, 2002).

2.4 Social Empowerment

Empowerment, as the word suggests, is primarily about the power, i.e. changing the power in favour of those who earlier possess little power over their own lives. Batliwala (1993) has defined the power on the basis of two aspects: one is having control over the resources and

other having control over ideology. Thus in whole empowerment can be defined as the process of gaining control.

Empowerment enhances one's self confidence and catalysis the process of inner transformation of their consciousness. It enables the individual to overcome external barrier for accessing the resources. The most important thing is that it cannot be done by someone to someone else. The change in the inner consciousness and perception of an individual are their own and can't be imposed. However, external agents may be needed to ignite the spark of transformation. They may act as catalysis but the momentum of empowerment is speeded by the people themselves.

Talking about the welfare policies and other governmental schemes, it is not the government that empower people; it is the people who empower themselves. Government policies and schemes can just create a supportive environment, in some cases, these may even act as barriers. People's participation and accountability in local governance are very effective in empowering poor people. It is the local level where the developmental schemes become ground reality through implementation.

3. Social Organization

Social organization or social institution refers to a group of social positions, connected by social relations, performing a social role. It can also be defined in a narrower sense as any institution in a society that works to socialize the groups or people in it. Common examples include education, governments, families, economic systems, religions, and any people or groups that you have social interaction with.

3.1 Introduction to Social Organization

Social Organizations are patterns of relationships (role, status) which are expected to be maintained as per certain rules and regulations, with a focus and functions to be performed, and to bring about social change/order, e.g. family, religion, economy and polity.

Social organizations can take many forms, depending on the social context. For example, for family context, the corresponding social organization is the extended family. In the business context, a social organization may be an enterprise, company, corporation, etc. In the educational context, it may be a school, university, etc. In the political context it may be a government, political party, etc. Commonly, experts officially recognize these five major social institutions that have been evident in some way in every civilization in history: government, religion, education, economy, and family.

In other parts of sociology, such as the sociology of organizations and especially new institutionalism (also new institutional economics in economics and historical institutionalism in political science), 'organization' and 'institution' refer to two different phenomena. Organizations are a group of individuals pursuing a set of collective goals with established roles, methods of coordination, procedure, culture and space. Institutions are ideas about how

something should be done, look or be constituted in order to be viewed as legitimate. The issue is complicated by the fact that one may talk of an organization as an institution, and of the institutions that govern an organization, and of organizations that seek to strengthen or destroy institutions.

Social organizations can be distinguished by sectors. Service oriented organizations are those that provide different kinds of services to people and to other organizations. These are the professional social organizations that have different lines of profession, e.g. education, health and environment.

3.2 College Based Social Organizations

The NGOs have influenced the creation of new groups and the strengthening of the existing groups working in the development sector. The college based social organizations are group of students working together with a common motive to achieve their goals while studying in the college. They believe in some ideologies and have the vision to pursue their aim and objective. These types of small entities have a well defined structure and generally work in their vicinity. Their work is restricted not only to provide the monetary help but also to support them. They generally work against some social problems existing in that community. The common areas of their working mainly include education sector, health and hygiene, women empowerment, etc. They have internal well defined structure and work formally as well as informally sometimes.

3.3 Working Methodologies

The college based social organizations are generally small organizations and their workplace is very small in general. They generally work on a small group approach. They believe in participatory learning.

Principal elements of a small group approach

- Focus on the rural poor. Group approaches aim at promoting disadvantaged groups of the poor.
- Groups are voluntary and self-governing. Participants decide who joins the group, who leads the group and what rules the group. Ideally groups are built on already existing collaborative links between group members.
- Small and homogeneous groups. A key element is the formation of small self-help groups. Conflicts are reduced when members live in similar socio-economic conditions.
- Income generation and savings mobilization are the starting points for group formation.
- Organizational and production skills are improved through demand-driven training and workshops.
- Formation of intergroup associations. Once groups are mature, they link together in intergroup associations to tackle bigger community problems and to improve their economies of scale.
- The ultimate aim is to make them self-reliant.

Participatory learning: Participatory learning describes an interactive learning process that enhances the cooperation and problem solving capacities of the poor. It requires two-way communication, from top-to-bottom and bottom-to-top and it addresses participants at all levels, from local to national.

By working through groups, the rural poor can link up more easily and more cheaply with services and gain access to productive assets. When group members come from the same socio-economic level and have similar concerns, learning is easier.

The learning focuses on demand-driven skill development in fields of direct relevance to the rural poor, such as organizational management and leadership, group savings and credit and small business management and accounting. Beneficiaries, not outsiders, set the demands.

Participatory learning methods are based on participatory rural appraisal (PRA) techniques as well as small group learning techniques.

3.4 Failure of Previous Poverty Reduction Schemes and Rise of Social Organizations

Some of the reasons for failures in the past poverty alleviation strategies were:

- A low level of participation by the poor: even though the ultimate stakeholders in the poverty alleviation process are the rural poor, all too often they are denied a voice in the formulation and even the execution of poverty programmes.
- Programmes have tended to rely on grants and subsidies as the main tools for serving the poor, but even when the subsidies did arrive, they often ended up undermining the poor's incentives to mobilize their own resources and creative energy.
- Too little attention has been given to strengthening the negotiating capacities of the poor, to enhancing their power to participate meaningfully in policy formulation and in the marketplace.
- Most poverty alleviation programmes have had a single vector of intervention and have failed to confront the multidimensionality of poverty. Priorities usually have been set from "the outside", thus being supply-driven rather than demand-driven and unable to respond to the particular needs and potentials of the poor.

Poverty alleviation is facilitated by:

- Increased access to productive assets for the poor, such as land and water, credit and education, extension and public health services.
- The active participation of the poor and their representative bodies in decision-making. They must be provided with an enabling environment that encourages collective self-help action, personal investments and accumulation. Programmes need to be designed on a demand-driven basis rather than be imposed from the outside.
- Government institutions and the incentives that make them accountable to the general public should be reformed. They must become more responsive to the needs of the poor. Decentralization and privatization of government services and administration can assist in that process, and the NGO and private sectors have a crucial role to play.
- The building of sustainable capacities for poverty alleviation requires a well-defined and long-term development approach.

3.5 Different College Based Social Organizations in India

Social service is becoming an integral part of the higher education system in India. Each college has its social service wing working in some way or the other fighting with prevailing social evils and challenges faced by the society.

A brief description of some of the common social groups has been presented here:

IIM Ahmedabad: “Ravi J. Matthai Centre for Education Innovation (RJMCEI)” was established in 1991 in memory of Professor Ravi J. Matthai (1927-1984), the first full-time Director of the Indian Institute of Management, Ahmedabad. From an initial focus on institution building and higher education, the mandate of the RJMCEI has gradually expanded to include primary education, literacy and secondary education. The common thread running through the Centre’s various activities is a focus on innovations and innovative approaches to countering problems in education.

IIT Kharagpur: “GYWS” is a registered NGO established by the students of IIT Kharagpur along with the help of a local person. It was established in 2002 with a mission to improve the living standard of the people, steadfastly targeting every crucial aspect of life, be it social, economical or educational of *Gopali*, a village 5 km from IIT Kharagpur. Registered in 2004 under the West Bengal Societies Registration Act of 1961 with Reg. No. S/IL/23893, it has been advancing with the twin objectives of making the youth and society aware of and ensuring socio-economic welfare for underprivileged and weaker sections of the society. Through its programmes of free education, social awareness campaigns and vocational training, GYWS has seen many lives changed for better.

BITS Pilani: “Nirmaan Organisation” is a non government and non-profit organisation committed to work for poverty free, knowledge powered and economically empowered nation by focusing on providing education and livelihood opportunities for underprivileged people. Nirmaan erstwhile *My INDIA* was started by a group of BITS students in the month of Feb, 2005, got registered as NGO on July 12, 2007 at Hyderabad. At present, it is operating with around 500 members through 8 chapters in four different states.

NIT Patna: “*Sankalp Ghar Ghar Siksha Ka*” is an association of students that has been working and fighting for improvement in child education of the destitute in the nearby slum areas.

NIT Warangal: “*Lakshya*” is a non-profit started by NIT Warangal Alumni in 2008. Lakshya is focussed on building an ecosystem of research and entrepreneurship through creativity and innovation at NIT Warangal by bringing together alumni, students, faculty, the institute and relevant partners.

NIT Durgapur: “*Bihari More Education Project*” is a volunteer driven Independent Initiative by Students, Alumni & Faculty of National Institute of Technology Durgapur aimed to nurture the Underprivileged Children & their Families in & around the Campus. In 2012, NIT-Durgapur students took a step further and expanded the zone of influence to include all the children workers present in the periphery of the Institute. They feel a moral responsibility to eradicate under-age labour, so that they understand their human rights to education and plan a better future for themselves. It was named *Project Jhoops*.

4. Domain of Working

The three common sectors of working outlined by these social organizations are: education, women empowerment and sanitation.

4.1 Education

Ever since the days of Plato, the role of education has been recognised in the development processes. Plato believed that education is a key instrument in the economic health of a good society. It was Adam Smith, who first made major contribution to the discussion of relationship between education and economic growth. It then followed a tradition of classical economists until the 20th century when Alfred Marshall emphasized that, “the most valuable of all capital is that invested in human being”.

It is believed that education turns a raw human being into a productive human capital. Education inculcates the desirable skills required by traditional as well as modern sector of the economy. It makes the individual productive in places, market places as well as household. However, the effect of education cannot be constant all the times. Exclusion from the education due to poverty generally occurs at the time of primary education stage.

From the available evidence (World Bank, 1980; Fields 1980; Tilak 1986), it has been found that education and absolute poverty are inversely related, i.e. the higher the level of education of the population, the lower would be the percentage of poor people in the total population. Education through various modes of social benefits helps in poverty eradication and has its impact on productivity of labour and thus is an important development goal of every nation (World Bank, 2005).

4.2 Women Empowerment

Women constitute 50% of the world's population whereas they represent 70% of the world's poor. Also women make up 70% of world's working hour and earn only 10% income. Women are given a keen importance in the International development agenda. Empowering the women and promoting gender equality are of prime importance in global development objective and is given place in MDGs.

For the successful implementation of empowerment strategies women should directly involve in the planning and implementation of development projects. Gender equality is an important aspect of poverty eradication revolution. In poverty reduction agendas and especially its gendered effects, there is a need for dismantling the institution and ideologies. When women will have equal and fair access to education and will thus participate independently in business and economic decision making.

Gender equality will also promote efficient well being of children and thus contribute in reducing the poverty of future generations. The equality will be in terms of political, social as well as economic resources. Keeping this in mind, the World Bank has made achieving the gender equality a top priority. The bottom line is that when more and more girls and women are being educated.

The review study also claim that the children of younger mother seems to suffer most from the socio-emotional disadvantages and are at higher risk of poor school performance.

4.3 Sanitation

From the past studies it has been observed that the most common case of descent into poverty in many countries of the world is ill health and the cost of the health care. The Uganda government has acknowledged the clear and direct impact of sanitation and basic hygiene on the poverty reduction along with on health and education in the Poverty Reduction Eradication Plan (MFPED, 2004).

A negatively correlated relationship has been revealed in the comparison of two variable, poverty rate and improved sanitation coverage rate. The poor nutrition has negative impact on the ability of child to learn. Everyone no matters what their poverty status, has water and sanitation services. But these services vary quite widely even within category of poor. Improving these services in itself a goal of poverty reduction schemes in other dimension of poverty.

Over 800 million people don't have access to clean drinking water, while 2.5 million people don't have proper sanitation facilities. A large amount of time is wasted in search of water rendering scarcity of time for productive work or school to build education and skills. Communities without toilet facilities live lives dominated by diseases. Daughters accompanying their mother often miss school thus perpetuating cycle of poverty. It has been found that for every \$1 invested in water and sanitation services, an average of \$4 is returned in increased productivity.

5. Role of NGOs and College Based Social Organizations in Poverty Alleviation

Since early ages, the social services constituted an integral part of a society's welfare and development system. A brief discussion is also presented on the role of NGOs, as these organisations in some way or the other has motivated the formation these groups. These bodies are also working in the same field and at a larger scale.

5.1 Role of NGOs

The role of NGOs in the poverty reduction schemes and programs is not a new issue. Since the post World War II era, the existence of these types of organization has come into main stream. In the late 1970s, NGOs have played an eminent role in the development sector. They have widely acknowledged for their participatory and decentralized form of development. They have been successful in filling the gaps left by failure of states across the developing world community. It was this failure of states in 1970s and 1980s that has motivated and presented the NGOs as development alternatives. These types of organizations are then no longer minor actors in development process and sometimes even challenging their government counterparts.

In general the work of NGOs is classified in two major categories, i.e. service providers and the advocates for poor. Talking about the role as service provider, they offer a wide range of services across various fields, ranging from livelihood areas to more specific fields of life.

In the 1990s their role in the field of political reform has been promoted. However the government has failed to recognise the role of social workers in the domain of social development especially in the formulations of social policies, their implementation, monitoring and evaluation. They also lack a legal framework in the system.

5.2 Role of College Based Social Groups

The challenges we are facing today are global, it is important that we should work in collaboration with others in this field. It is a general prejudice among people that to a greater extent, the social workers in the field of poverty reduction programs are limited to the extent of providing remedial measures. These organizations have emerged as a means of spreading awareness, empowering the poor sections and promoting the goal of self-reliance among them.

Primarily the role of social workers working in these types of organizations is increasingly recognized for promoting the social development. Since the poverty has a deleterious effect on the smooth running and over all well being of life of individuals in society. This role is considered very critical in case of persistent type of poverty.

From the final analysis of vast literature review conducted, it has been found that the role of social services is to ensure that the poor should also be benefitted from the economic development. It will be instrumental in the equity, political stability and the most importantly in sustained democracy.

These organizations are known for their grassroots orientations, autonomy, innovations and sustainability. These types of organizations have a vast diversity and this diversity is their great strength. Continuous success and their image as innovators of new technologies and their working strategies have fixed their places in the poor community.

6. Impact of College Based Social Organizations

These types of organizations have a deep impact on the people. However their area of influence is generally restricted within a small village or slums. Working in these groups not only benefits the society but also to the volunteers working in them.

6.1 Impact on Society

With the help of students, there is more awareness among the poor people regarding their basic rights and duties. There are many policies that are been made up by the government to help the poor but they don't have proper knowledge about it. With the help of students, their access to all these policies has increased among poor in the areas where these organizations

are working. It enables the government and states scheme to become ground reality and benefit those for which they are intended.

As students are still through their education, they are able to help the children of the poor in a better way. Students are using technology to help the poor in ways that people couldn't have imagined. They introduced new techniques of teaching.

These organizations do not believe in charity and hence doesn't provide only monetary support. Financial help is not the main way to help the poor. To actually resolve the issues of the poor, we need to understand the problems they face, help them solve it and make them independent. Students offer voluntary help mainly and not the financial help. With the voluntary interaction with the poor, the students get to know their problems in a better way and help them in many ways. People are coming forward and are co-operating with them. They are successful in empowering them and providing social protection.

6.2 Impact on Students

Social work is primarily about values and relationships and not just financial help. In developing that relationship, trust and respect, the student learns lot. The learning includes being non-judgmental and challenging discrimination which is very important in social work. As the students are exposed to many situations, they develop a sense of responsibility and the confidence to tackle various situations.

Students get to understand the issues of poverty, socioeconomic disadvantage, interpersonal and community violence, substance abuse, and mental health problems, social injustice and discrimination, and how these impact the society.

Working in these types of organizations is like a *social internship* to students. It provides them an eye opening experience and an opportunity to come across the ground realities of living conditions of poor. They got to interact with them and know about the real challenges they are facing that inhibit them from rising. Students got to analyze some social situation from their viewpoint and get other dimension of it from their peers. The peer learning is best part of these organizations which enriches the student's intellectual.

7. Case Study: Kashi Utkarsh

Kashi Utkarsh is a social organization run by the students of IIT (BHU), Varanasi with the aim of motivating people to rise and build up a more prosperous society with their own hands by spreading awareness regarding education, health & hygiene and women empowerment.

Since its inception in 1997 by two students of IIT (BHU), Anupam Bansal and Vinod Chaudhary, the following areas such as education, health & hygiene and women empowerment have been covered.

7.1 Working of Kashi Utkarsh

At present Kashi Utkarsh is working in three different slums of Varanasi that are

- Lahartara Basti
- Kakarmatta
- Patiya (Bajardiha)

Apart from these slums, it is also doing some campus activities which majorly include:

- Gyaan Udyaan

The detailed working of the organisation is discussed in detail below:

School Teaching Model: In Lahartara Basti, Kashi Utkarsh adopted three junior schools, each having strength of around 300 students. Kashi Utkarsh started its activities by surveying the area and asked people for the reasons responsible for the poor condition of children. The survey results revealed that those people were financially unable to pay their children's fees. A very common solution to this problem was that Kashi Utkarsh could get all the students admitted in school and pay their fees but that was not a sustainable solution. So Kashi Utkarsh decided to pay a part of their fees and the remaining part was paid by the guardian so that they would feel some responsibility towards their children's education.

Another problem regarding education in these schools was that the quality of education, the methodology that they used for teaching should have focused on learning as well as to make the children more competitive. Hence, Kashi Utkarsh team decided to visit these schools and take classes there on weekends. They divided the children according to their levels and ensured the progress of the students by proper examination, doubt clearance and innovative methods of teaching like learning by audio visual aids and making them understand the concepts rather than just going by theory. Kashi Utkarsh team also conducted many sports and cultural activities there to develop a sense of confidence in them. One such example is Kashi Utsav, a social awareness event which acknowledged strength of more than 1000 people and got appreciation from the district administration of Varanasi.

Since Kashi Utkarsh started paying fees of students who were unable to pay it on their own, the people started taking advantage of this initiative. So Kashi Utkarsh started reducing its part in their fees every year and gradually this made the parents pay the entire fees on their own and realize the importance of education. In this way, Kashi Utkarsh finally left the basti in 2014 after making them realize the importance of education and making them self-reliant.

After Kashi Utkarsh left the Basti, a survey was conducted which showed that the children over there had started going to school by their own.

Basti – terminology for slum in hindi.



Fig 1. Sports fest at a school in Basti

Women Empowerment: In India, male dominant society is one of the main reasons for the poor condition of women. Women can do a lot of work in their leisure hours and can earn appreciable amount of money which in turn can contribute towards their upliftment. The main requirement is to develop skills in them and to train them to utilize their free time in a better way. So Kashi Utkarsh started *Silai* and *Mehendi* classes in basti with the help of a woman who had done these courses. As a result of these classes, more than 80 girls of that basti have been benefitted and many of them have started earning. These courses are now being followed by other courses like beauty parlour. Vocational training can play a very important role in women's life. It can increase their confidence and when they start earning and supporting their families, they start encouraging them. Time to time, KU also organizes various competitions to keep a check on their learning and to analyze the progress of the program. We all know an empowered woman can lead a family more efficiently which also fulfils the aim of Kashi Utkarsh.



Fig 2. Silai Competition at Basti



Fig 3. Mehendi sample drawn by the girls at Basti

Library establishment: Prof B.B. Bansal was the patron of Kashi Utkarsh. After him, his wife Prof. Usha Rani Bansal had been appointed as patron. We all had studied in schools which had library, sports and cultural facilities but the students of basti are not blessed with this type of environment. So Kashi Utkarsh decided to setup a library in one school of the basti in the memorial of Late Prof. B. B. Bansal. Kashi Utkarsh also started conducted activities such as quiz, painting competitions, art and craft presentations. The aim for setting

up the library was to develop reading habits and curiosity to learn various things in the students. The librarian was once a student mentored by Kashi Utkarsh. In this way Kashi Utkarsh provides employment among young and other people.



Fig 4. Children at school being shown videos from laptop.

Navodaya Teaching: Jawahar Navodaya Vidyalayas (JNVs) are a system of alternate schools for gifted students in India. They are run by Navodaya Vidyalaya Samiti, New Delhi, an autonomous organization under the Ministry of Human Resource Development, Department of Education, Government of India. JNVs are fully residential and co-educational schools affiliated to Central Board of Secondary Education (CBSE), New Delhi, with classes from VI to XII standard. JNVs are specifically tasked with finding talented children in rural areas of India and providing them with an education equivalent to the best residential school system, without regard to their family's socio-economic condition.

A student needs to pass an exam to get admitted in a JNV. So the volunteers of Kashi Utkarsh took a test and filtered out students who were taught on weekend and were provided coaching in other weekdays by appointing a separate teacher. Many students got admitted in Navodaya Schools due this initiative. Till now, 40 students have been selected in Jawahar Navodaya Vidyalaya Entrance Exam and now these students are studying in Jawahar Navodaya Vidyalaya, Gajokhar, Varanasi.

Higher Education Support: It has been mentioned that in Lahartara there are only junior schools, so students have to shift from these schools to pursue their secondary education.

Main factors which affect their higher studies are:-

- Economic condition of their families
- Stereotypical mindset of male dominant society which makes them think that investing in girls' education is not worthy
- Lack of guidance regarding future carrier opportunities

Hence Kashi Utkarsh formed a secondary education team which basically tracked students of class 8 in schools and guided them. Kashi Utkarsh funded for the students whose parents were unable to pay their fees on only one condition that every weekend they have to report and show their progress to us. In this way many students would have left studies are now

pursuing studies. Kashi Utkarsh is proud that most of the students who have been benefited by this support are women and now they are working and supporting their family.

Gyaan Udyaan: It is a place in Indian Institute of Technology (Banaras Hindu University) where around 80 children of nearby basti are provided with basic education. In addition to this many women and girls also come there who did not get education in the prior stages of their life. At Gyaan Udyan, they are also made aware regarding nutrition and cleanliness.

The progress of every student is regularly monitored and they are taught keeping their learning curve in mind.

At Gyaan Udyaan, many festivals like Independence Day, Republic Day, Gandhi Jayanti etc. are celebrated in which children perform various cultural and sports activities which help them to develop their personality and build self-confidence.



Fig 5. Students performing physical exercises at Independence Day

Patiya Basti: It is a slum inhabited by rag pickers near Sunderpur area of Varanasi. There are around 50 children of age less than 14 years and none of them ever went to a school in their life. The situation there is so bad that even parents are reluctant to send their children to schools because their child is a source of income for their family. Other problem faced by this basti is related to hygiene. Since they collect garbage and sell it to survive, they live in the most unhygienic conditions. Kashi Utkarsh started working there with the aim to motivate people so that they start sending their children to school by themselves and adopt basic hygiene habits. These activities were achieved by training particular people of that basti and then with their help influencing other people of the basti. A person from that basti who was literate and knew the importance of education, helped us to inspire people there and convinced the parents to send their children to schools. Initially, a few students were admitted to the nearby school. Taking those children as an example, other parents at the Basti approached Kashi Utkarsh for getting their children admitted to school and gradually were even ready to pay their fees.

The Kashi Utkarsh volunteers visit Basti every weekend and monitor the progress of each student at the school. They also help the students develop hygienic habits.



Fig 6. Students are demonstrated by a volunteer on how to wash hands properly.

Health and Hygiene: Apart from education, health plays a very important role in individual's life. In the above mentioned locations, the standard of living and hygiene were very bad and that is why many of them used to get frequently sick and contract diseases like cancer, goitre, tumour and many others. So Kashi Utkarsh started organizing medical camps every year with help of Sir Sunderlal Hospital, Varanasi. The purpose of medical camp is not to donate medicines, but to make them aware about the probable diseases they may get.

The students are regularly checked for their nails and other hygienic practices so that they make all these practices a habit.

Also Kashi Utkarsh organizes blood donation camps in IIT campus to make students realize the importance of blood donation. Kashi Utkarsh has also created a record of collecting 653 units of blood in a span of two days.

7.2 Organisational Structure of Kashi Utkarsh

Every Friday, Kashi Utkarsh meeting is conducted to discuss the work done previously and new things that are to be implemented in the next basti visit.



Fig 7. Volunteers at Friday meeting.

According to the work requirement, Kashi Utkarsh has divided its volunteers into different teams to achieve a common goal of development of society via education and awareness.

- **Gyaan Udyaan Team:** This team ensures regular teaching of nearby slum children and mess workers in campus.
- **Silai Menhedi and Library Team:** This team works for women empowerment program and ensures smooth functioning of silai, menhedi and parlour classes in the basti. Also this team ensures that the library functions properly.
- **Secondary Education Team:** This team ensures education of students who are unable to continue their higher education due to problems of fund and also give appropriate guidance for their studies.
- **Ravidas School Team:** Till 2014 this team played a vital role in making families realise the value of education for their children. Gradually the school started taking proper measures towards the education of children at Basti. Thus Kashi Utkarsh dissolved this team and start working in Kakarmatta basti.
- **Navodaya Team:** This team identifies bright students from basti who have the capability to secure an admission into the Jawahar Navodaya vidhyalaya and help them achieve that goal.
- **Patiya Basti Team:** This team is working for children in a society of rag pickers. This team works extensively to bring change in the field of education where people earlier did not know what a school meant. Also the team works towards improving the hygienic conditions in the Basti.
- **Kakarmatta Basti team:** This team was formed in 2015. The situation in this basti is a bit similar to Patiya Basti and Lahartara Basti. In addition to the problem of education in the Basti, the people there also have problems with the people with different castes. Hence the team faces a tedious task of teaching all the children from various castes at the same place.

Source of funding: Kashi Utkarsh is a student run organization, so it collects INR 20 per month from each student of IIT (BHU) who is willing to donate towards this social cause. Also the vast alumni network of the institute ensures that the emergency fund requirements are taken care of.

7.3 Achievements of Kashi Utkarsh

Kashi Utkarsh as an organisation is going to complete its two decades. During this course the organisation has been successful to quite an extent in achieving its vision.

During these years, it has reached some milestones and is still working to replicate their successful models at other locations. Some of them are described below:

1. Pooja Bind, a student from Lahartara Basti who was under the guidance of Kashi Utkarsh, got selected for admission to Banaras Hindu University for BSc (computer science).

2. Nagendra Kumar, a student from Lahartara Basti, who went to Navodaya Vidyalaya in 2004 through coaching classes arranged by Kashi Utkarsh, got selected in IIT-JEE with an AIR 246 (SC category). Currently he has completed B. Tech course in Electrical Engineering (Power) at IIT Delhi.
3. Funds to the tune of INR 2,74,000 were collected for the heart surgery of Saloni, a 6 year girl suffering from chronic heart disease which could not be treated in Varanasi. Saloni was then treated in Narayana Hrudayalaya, Bangalore by Dr. Devi Shetty and course of treatment suggested by him is being followed.
4. Heart surgery of Pinki, an 11 year old child with a hole in her heart. For Pinki, Kashi Utkarsh team arranged Rs.90,000. She was operated at Narayana Hrudayalaya, Bangalore.
5. During Tsunami disaster, Kashi Utkarsh collected one lakh rupees, tons of food, medicines and clothes. These things were distributed by their volunteers in South India.
6. Funding of Pooja Verma for her computer classes was done by Kashi Utkarsh team as a result of which she has a permanent job now and she owns a coaching centre as well.



Fig 8. An image of Kashi Utsav.

A question that may arise is whether the methodology of Kashi Utkarsh is sustainable or not? The answer is yes. Parents in the Basti have gradually started realizing the value of education and are now sending their children to schools on their own. The vocational training courses which were initially supported by Kashi Utkarsh are now running independently without any external funding. People in Patiya are realizing importance of education and coming forward for admission. There are many other examples which prove sustainability of Kashi Utkarsh's system.

8. Conclusion

Poverty is not a static situation; hence remedial measures are not sufficient to deal with it. Economic growth and providing financial assistance would not help them empower or develop in real sense. Nobel Prize winning economists, Joseph Stiglitz and Amartya Sen have admitted that GDP does not capture the human condition. We need to create measures beyond GDP, and economies beyond the global super market. The growth process has not typically had strongly adverse impacts on the relative positions of poor. Therefore in order to completely eradicate the poverty from its roots, we need to educate them, empower them and make them self dependent. It is therefore suggested that a life cycle approach should be adopted in poverty reduction measures, starting from the early years of their formal schooling to ensure their preparedness for school, keeping in mind their family and other proximal contexts.

Poverty reduction measures should also focus on the indirect processes that relate poverty to child development and educational outcomes. Equal importance to the education of girl child is to be given. They have the right to have equal opportunities at every step of education. Both ecology and economics are derived from the same roots- 'oikos', the Greek word for household. Economics as based on the household is women centered. Without empowering the women half of the population will always remain in poverty and pull back the development process. Investing in women's economic empowerment sets a direct path toward gender equality, poverty reduction and inclusive economic growth. We need to remember that the real currency of life is life itself.

Apart from education other non-income aspects of poverty such as health care and sanitation should also be improved and made accessible to every poor individual. An element of poverty reduction strategies should include well planned implementation and monitoring of sanitation and health schemes. The economic benefits of clean water and sanitation transform lives in the world's poorest communities. By prioritizing the improvement of water, sanitation and hygiene services, civil society, governments and local partners could help ensure more communities across the developing world have the time and health necessary to start the climb out of poverty

The ultimate goal should be social development rather than poverty reduction and this can be achieved through social protection and social empowerment. Empowerment is both, a process as well as goal. Kashi Utkarsh, a student run social organization running smoothly over 2 decades has clearly proved that it is only by empowering the each and every people irrespective of socio-economic status and gender, real growth and decline in poverty can be achieved.

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The Experiment of Poverty Reduction Strategy in India:

A Case for Analysis

Prof Anuradha Palanichamy

Assistant Dean (International Collaborations), Jindal School of Government and Public Policy, India

Abstract

“India would become truly independent only when the poorest of its people would be free from human suffering” - Mahatma Gandhi

India, in the 21st century has set forth an ambitious donor-driven, Poverty Reduction Strategy approach with a pro-poor agenda based country's macroeconomic, structural, and social policies and programs to promote growth and reduce poverty, as well as associated financing needs. It is an essential blue print to be prepared every three to five years in a participatory process involving a broad range of stakeholders.

The core factors that bind India's the PRSP experiment include:

Participatory Planning— that will outline the format, frequency, and location of consultations; a summary of the main issues raised and the views of participants; an account of the impact of the consultations on the design of the strategy; and a discussion of the role of civil society in future monitoring and implementation.

Comprehensive Poverty Diagnostics — an understanding of the poor and where they live which would enable the PRSP to analyze the macroeconomic, social, structural and institutional constraints to faster growth and poverty reduction.

Priorities for Macroeconomic, Structural, and Social policies — In light of a deeper understanding of poverty and its causes, the PRSP sets out the macroeconomic, structural, and social policies that together comprise a comprehensive strategy for achieving poverty reducing outcomes.

Appropriating targets, indicators, and systems for Effective Monitoring and Evaluating (M&E) progress — defines medium and long-term goals for poverty reduction outcomes (monetary and non-monetary), establish indicators of progress, and set annual and medium-term targets. The indicators and targets is aimed to be consistent with the assessment of poverty and the institutional capacity to monitor, and the policy choices in the strategy.

Conclusion: Although over the past few decades, India has allocated 6 per cent to 7 per cent of budgetary expenditures, or 1 per cent of gross domestic product (GDP), to its antipoverty programmes, India's various states differ significantly in terms of economic growth and poverty reduction. In particular the increased emphasis on planning for poverty reduction, the adoption of new methods of implementation, the greater political sensitivity, and the utilization of a broader range of institutions and organizations in the different phases of reforms have led to the sustainability of the developments and to a large degree the process of change.

Key Words: *Poverty Reduction Strategy, Monitoring and Evaluation, Performance Agreement, Macroeconomics, Participatory Planning and Delivery.*

Introduction: Cities play a vital role in economic growth and property. Sustainable development of cities largely depends upon their physical, social and institutional infrastructure, while urban centers may be viewed as engines of growth, the cities are at the crossroads of change. In India, the process of urbanization is at critical juncture and India is among the countries at low level of urbanization.

The structure of urbanization is changing in India and there has been change in the pattern of urban growth. During 1951 to 1991, urban growth was generally high in relatively less developed states and developed states experienced low urban growth. However, a significant departure of this pattern in 1990s emerged from the earlier decades as the developed states registered urban growth above the national average. Urban poverty alleviation is the major thrust of development planning in India. However, poverty eradication is a daunting task as the problem is gradually increasing due to migration of rural poor people in urban centres.

Pro-Poor Governance: There has been paradigm shift in urban governance in India. In this context, “Decentralization” as envisaged by 74th Constitutional Amendment Act, 1994 has led the process of municipal reforms and ensuring urban governance, however, the task of devolution of powers, functions, and finances to local bodies is still showing unfinished agenda. The escalating demand for urban infrastructure and services has called for mobilization of resources through public private partnership initiatives and introducing municipal reforms in urban local governments. The urban infrastructure development schemes - JNNURM, UIDSSMT and IHSDP have shown the new path of infrastructure development and its maintenance since the schemes are reforms oriented and seek public private partnership, community participation, resources mobilization and focus on augmenting efficiency of urban local governments. The urban governance is also experiencing a paradigm shift. The policy on urban housing and habitat intends to promote sustainable development of human settlements with a view to ensuring equitable supply of land, shelter, and services at affordable prices to all section of society. The strategies for empowering urban poor are also changing.

Challenges in Pro-poor Governance: Urban poverty is a major challenge before the urban managers and administrators of the present time. Though the anti-poverty strategy comprising of a wide range of poverty alleviation and employment generating programmes has been implemented but results show that the situation is grim. Importantly, poverty in urban India gets exacerbated by substantial rate of population growth, high rate of migration from the rural areas and mushrooming of slum pockets. Migration alone accounts for about 40 per cent of the growth in urban population, converting the rural poverty into urban one.

Moreover, poverty in India has become synonymous with slums. The relationship is bilateral i.e. slums also breed poverty. This vicious circle never ends. Most of the world’s poor reside in India and majority of the poor live in rural areas and about one-fourth urban population in India lives below poverty line. If we count those who are deprived of safe drinking water, adequate clothing, or shelter, the number is considerably higher.

Poverty-Structural Definitions: Poverty is broadly defined in terms of material deprivation, human deprivation and a range of other deprivations such as lack of voice, vulnerability, violence, destitution, social and political exclusions, and lack of dignity and basic rights. In India, and indeed throughout the world, the conventional approach equates poverty with material deprivation and defines the poor in terms of incomes or levels of consumption. The Planning Commission has defined poverty in terms of the level of per capita consumer expenditure sufficient to provide an average daily intake of 2400 calories per person in rural areas and 2100 calories per person in urban areas, plus a minimal allocation for basic non-food items. There is no doubt that material deprivation is a key factor that underlines many other dimensions of poverty.

The Horizon of Development vis-a-vis Poverty Alleviation: Despite uncertain progress at reducing material deprivation, there has been greater progress in human development in the states throughout the 1990’s. Human Development Indicators capture important dimensions of well-being and reflect

not just the rate of growth in the economy but also levels and quality of public spending. Effective public spending on basic services (education, health, water and sanitation) can compensate for limited capacity of the poor to purchase these services through the market. Education is a key indicator of human development. Many desirable social and economic outcomes are limited to rising levels of education, particularly education of women and of socially vulnerable groups. Health status is another key indicator of human development. Vulnerable, powerlessness, exclusion and social identity crises are some of the issues related with human poverty. Vulnerability is a fact of life for the poor. They are distressed not only by current low levels of resources and incomes, but also by the possibility of falling into deeper poverty and destitution. The poor are at risk because they lack the income, the assets and the social ties that protect the better off from the impact of unexpected setbacks. Illness requires expensive treatment; the temporary or permanent disability of a breadwinner, or a natural or man-made disaster can obliterate a poor household's small savings.

Strategies for Poverty Eradication: Given India's mixed record of the past, what are the chances that the political intent will translate into public action? Clearly, there is a long way to go in ending human deprivations. Access to quality health care, basic education and other essential services has to improve dramatically. Caste, class and gender barriers have to be addressed. Physical provisioning has to be expanded considerably. There is scope for optimism because

- The Tenth Plan and official policies for poverty eradication reflect human development priorities.
- Economic conditions are favourable.
- Democratic participation is opening up. This is not just through local governments but through people's organizations, and in particular women's groups that are frequently organized around credit, economic activities and social empowerment.

Decentralization-As a means to Poverty Alleviation: The issue of decentralized participatory planning leads to generation of ownership which, in turn is crucial for sustainability of any development intervention. Extent as well as qualitative difference can be observed in terms of outcomes between interventions performed with and without community participation. The concept of decentralized planning is built on a serious assumption, that all key tiers except the bottom one within the governance system would spontaneously transfer powers and responsibilities to the successor one. In reality, it strongly contradicts the common attitude, and can be observed in the process dynamics, wherein a specific tier strongly advocates for its power and authority, but is hardly keen to pass on the same downwards.

Governance Approach to Poverty Eradication: Bringing in motivational change along the extensive Governance framework, along with organized movement of people to facilitate the process of decentralization could be a solution in the long run. In this context, some national models of participatory development planning have been analyzed to tentatively point out the strengths, weaknesses and replicability for each; with a view to suggest an effective planning mechanism.

The term 'inclusion' is very widely used in India today, with the 11th Five Year Plan setting the tone of debate under the rubric 'Inclusive Growth'. In urban settings term 'inclusive' can take number of meanings, namely: (i) inclusive of the informal sector in general and informal settlements in particular, (ii) inclusive of the urban poor (whichever way the poor are defined), (iii) inclusive of the new migrants, (iv) inclusive of the communities on the margins, (v) inclusive of all the religious groups, (vi) inclusive of all the disadvantaged (the old, the young, the disabled, etc.) and (vii) gender equality. In other words, cities and hence city planning mechanisms should address the inequalities emanating from the class, caste, religion, age and gender inequalities, widespread in the current urban milieu of India. A lot has been written on these inequalities. The challenge is can the urban planning profession rise upto the challenge of addressing these inequalities?

Participatory Governance: Citizens' Report Cards in Bangalore-India : The Citizen's Report Cards (CRC) by Dr.SitaSekhar of Public Affairs Centre (PAC) Bangalore, has been using Report Cards for monitoring service delivery in Bangalore city and also assisting NGOs in other cities to carry out similar exercises in their own cities. PAC has undertaken three exercises of CRCs till now in Bangalore.

It all begun in 1993, when the public services in Bangalore were inadequate and inefficient, there was wide corruption and abuse of discretion by the providing authorities and complacency of media and citizens. A way out was required and impetus to change had to come from active members of the civil society. The way out was 'Strengthening citizen's / consumer's "voice" to raise the demand for change and reforms' on one hand and 'Strengthening agency / provider's "responsiveness" to facilitate citizens participation and involvement. The CRC concept evolved from this reality. Like any Report Card, which is a simple evaluation tool, structured for simple communication, providing summative feedback on performance, scope for comparison with other students, and a starting point for reflection and corrective action, CRC carries out the same functions for public services.

The CRCs provide: (i) credible user feedback on public services, (ii) opportunities to communities to demand more access, responsiveness and accountability from the service providers, (iii) an effective diagnostic tool for service providers and encourage them to introduce citizen friendly practices, (iv) an environment to facilitate demand mobilization and 'RightsBased' strategies, and (v) a continuous benchmarking of public services.

Conclusion: In conclusion, 'Integrating the Urban Poor in Planning and Governance Systems' is a very vast topic. It requires a critical look at the Urban Planning policies and mechanisms from the perspective of the poor & middle-income citizens. It also requires assessing the needs and aspirations of the urban poor for bringing them into planning mechanisms. It requires an appropriate scale of planning, which is a ward, where planning, governance and financing mechanisms can be dove-tailed to include the poor. It also requires participatory processes and creation of structures for participation. In other words, pro-poor planning and governance requires creation of new institutional structures, new sectoral priorities and flexible planning systems.

The recommendations pertaining to Planning, Governance and Poverty Alleviation include:

- Dynamic and socially responsive Master/ Development plans
- Three tiers of physical pro-poor plans, with matching the planning and administrative boundaries
- Encouraging local area planning, which should be at least at the ward level with community participation
- Laying emphasis on social sector infrastructure in the Master/ Development Plan for the poor.
- Creating institutional mechanisms for participating in planning, local economic development for example through formation of Urban Poverty Resource Centres (URCs).
- Allocation of land for the urban poor through allocation of public lands on one hand and reservations in private sector housing developments. Detailed proposals for increasing land availability for the urban poor is discussed in the report of Workshop on "Approaches to the Lands for the Urban Poor".
- Promoting transit oriented development through appropriate planning for poor and marginalized..
- Interlinking low income households with major public transit routes.
- Pro-poor components in the city development plan such as ensuring 20 per cent of projects are meant for the urban poor. Pro-poor expenditures are on public transport, bicycle lanes, pedestrian ways, water supply, sanitation, informal markets and housing.
- Pro-poor expenditure on water supply and sanitation would mean extending these services to non-notified slum settlements or temporary slum settlements.
- Establishing an Integrated Poverty Monitoring System (IPoMS)

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Weights for Targeting Indices:

Between income-based weights and normative weights

Lina M. Sanchez-Cespedes

Institute for Social and Economic Research, University of Essex, Wivenhoe Park, Colchester, United Kingdom, CO4 3SQ

Abstract

The objective of targeting indices is to identify the poor population for social programmes aiding in concentrating public resources on those who cannot satisfy their own basic needs, saving the resources that would be spent on those who can provide for themselves. These indices are widely used in developing countries in Latin America and Asia. The weighting method we propose to design targeting indices consists of maximising a function that depends on the number of poor beneficiaries, by income and/or expenditure, given some restrictions on the weights. We demonstrate that maximising this function is equivalent to minimising the inclusion (IE) and exclusion errors (EE) by income and/or expenditure, which are the main criteria to evaluate targeting indices. IE or type I error is the percentage of beneficiaries who are not poor, and EE or type II error is the percentage of poor people who are not beneficiaries. The indices designed with this method target poor people taking into consideration wellbeing dimensions that are uncorrelated one another. This is the main drawback of the usual methods, such as principal component analysis (PCA) and proxy means test (PMT) methods. In addition, we demonstrate mathematically and empirically that probabilistic models are the models that minimise the IE and EE. This result is very important for policy makers, because probabilistic models become a guide to develop targeting indices. Now, they will know which wellbeing indicators increase or decrease these errors. In the empirical exercise we compare our method to others; we find that our index has smaller inclusion and exclusion errors than PCA and normative weights and a more equitable distribution of weights across indicators than PCA, normative weights and PMT.

Keywords: Multidimensional Poverty, Poverty Measurement, Targeting Poor Population, Weighting Method, Inclusion and Exclusion Errors, Social Programmes

Why Effective Community Engagement Matters For Effective Socio-Economic Development – A Case Study of the community engagement process in the Northern Cape Province of South Africa

Loshnee Naidoo (Ms.)

Sansara (Pty) Ltd

Abstract

Effective socio-economic development (SED) can have major positive impacts on communities, the public and private sectors and countries at large. For SED to be effective all relevant stakeholders need to be engaged. Of these stakeholders none is more critical than the communities that SED attempts to impact.

Community engagement needs to move beyond the rhetoric and superficial if it is to provide the depth of value, that it has the potential to do, for communities, private sector and the public sector. A case study, of a community in the Northern Cape Province of SA, will be used to highlight one possible option of an effective community engagement process. This process was conducted on behalf of an international Energy Company, ACWA Power, which had won a licence to build, operate and maintain a renewable plant as part of the Department of Energy's Renewable Programme. The case study will then indicate the impacts for the community, public and private sector.

These inclusive community engagement sessions were one of the reasons that ACWA Power won the Africa Utility Awards: Best Community Project 2015. It was also one of the reasons why the Minister of Energy invited !Kheis community members to the SA Parliament to share their experiences.

Keywords: Socio- economic development, Community engagement, inclusive

Effective socio-economic development (SED) can have major positive impacts on communities, the public and private sectors and countries at large. For SED to be effective all relevant stakeholders need to be engaged. Of these stakeholders none is more critical than the communities that SED attempts to impact.

Community engagement needs to move beyond the rhetoric and superficial if it is to provide the depth of value, that it has the potential to do, for communities, private sector and the public sector.

Socio-economic Development

To be able to determine what effective SED is, one has to start with what is SED. This term has been bandied around for quite some time with various meanings attached to it depending on the rationale for the use and the audience. From experience SED effectively means any programme or project that positively impacts the lives of the community in a sustainable manner. Sustainability itself is defined in various ways. This could be financial self sustainability, sustainability through continued grant support or it could mean sustainability in terms of the quality and type of programme or project that is to be implemented. Sustainability could also be defined as community buy-in and hence community management, responsibility and accountability for such.

SED has been, for the South African (SA) Government, one of the tools used to address the dire state of poverty in the country. For the local communities this is hoped to be the panacea to their current state of appalling living conditions. These communities, due the levels of poverty, require that their immediate needs be catered for. These include homes, electricity, water and sanitation, healthcare and employment. Each of these has many trajectories, which could act as an aid to, or as a spinoff off, these needs. If we take employment, the immediate aid would be education and skills training. The spinoff would be the need for colleges, transportation and access to information. These trajectories offer many business opportunities for micro, small and medium private sector companies.

The rationale for the private sector, in SA, of effective SED is on multiple levels. Firstly, in terms of the Broad Based Black Economic Empowerment (BEE) programme, they would be rated higher, be a preferred supplier and hence access more contracts with the SA Government.. The second rationale could be in being able to source skills that are company relevant by providing specific training for the community within the locale of the company. The third rationale would be that in developing local communities to participate in the economy it could reduce company's cost of business by procuring locally from the community. Another positive impact would be the additional spinoff business opportunities being created as mentioned in the previous paragraph. Finally, by improving the lives of the communities companies will develop an improved relationship with the community which could stand them in good stead during labour negotiations, unrest and recessions, amongst others.

SED is a core strategy of SA Government, and many other Governments, in the war on poverty and hence it has become a key function of SA Local Government. The effective delivery of SED is therefore part of their mandate and on an annual basis an Integrated Development Plan (IDP) is developed based on the needs of the community, as identified by the community. SED is also important for the Local Municipalities, as the community is also their constituency.

Critical Stakeholders

A case study, of a community in the Northern Cape Province of SA, will be used to highlight one possible option of an effective community engagement process. This process was conducted on behalf of an international Energy Company, ACWA Power, which had won a licence to build, operate and maintain a renewable plant as part of the Department of Energy's Renewable Energy Independent Power Producer Programme. The case study will also indicate the impacts for the community, public and private sector.

The SA Department of Energy commenced its Renewable Power Programme in 2011 with ACWA Power being awarded the licence for the Bokpoort Project in 2013. A mandatory aspect of the licence was the economic development element. One of the deliverables within this was the socio-economic development of the !Kheis community which lived within 50 km of the project site. The !Kheis community had a population of 16 637 and had unemployment rates of 29,7%, in 2013 which brought with it the resultant implication of poverty.

Community Engagement

The benefits of community engagement have been espoused by many and hence, forms part of SA Local Governments processes. It is also a legal requirement for environmental impact assessments of Public Private Partnership projects. The critical aspect though is the efficacy of these processes. Both, within the public and private sectors these tend to be mostly a unidirectional sharing of information. Where dialogue does occur there tends to be a lack of follow through and feedback to the communities. This leads to a breakdown of trust between the communities and the public or private sector player.

For effective engagement to take place the organisation, public or private, must be aware and respectful of the needs of the community in the planning and execution of the engagement process. With the !Kheis community prior research into the culture of the community as well as the constraints they face allowed for the engagement sessions to be planned in a manner that was not disrespectful and imposing on the community. It also allowed ACWA Power to be seen in a non-arrogant light. The research allowed us to determine where and when meetings should be held based on employment, travel and family constraints. Another consideration that we factored in was the best communication tool to ensure all community members were informed of the meetings. To give insight into these: most adults worked a distance from their homes and due to lack of private or public transport had to walk home and hence this affected the time when the meetings could be held. Regarding the notification of the meetings: the community did not have access to newspapers or radio hence notices were printed and pasted onto shop doors as well as being handed out at schools. Just these two considerations have the impact of ensuring that the entire community has been informed and has the potential to attend the sessions, which is should be fundamental to effective community engagement. Inclusivity is critical.

The actual engagement sessions are the second part of the process. Once again, in the execution of the meetings, it is important to factor in the culture and needs of the community. These need to supersede those of the public or private sector as the community is the client. With the !Kheis community they were predominantly Afrikaans speaking and hence the meeting was held primarily in that language. The prevalent language was used with the ability to translate for those who favour other languages. Once again for effective engagement to occur understanding is fundamental.

Although it is important for the company to introduce themselves and the project the maximum amount of time should be allotted to question and answers. In the initial community meeting about ACWA Power spent 20 minutes introducing themselves. The remainder of the meeting allowed for the community to raise questions and concerns that they had and these were then addressed by ACWA. The community were also requested to identify the critical needs of the community the ACWA could fund. This created a space for dialogue and was dealt with in a manner that was honest and did not overpromise and hence managing expectations. Overpromising and under delivering will definitely lead to a breach of trust. This breach could have serious repercussions for public or private sector entities, especially if they are to be part of the community for an extended period of time.

A critical factor in effective community engagement is ensuring that the SED projects identified by the community become part of the SED plan. Firstly, these communities understand their needs better than any outsider. Secondly, this serves to build trust, which is critical for the public or private sector entity. Thirdly, in many instances, the needs of both parties will dovetail, as was the case for the Bokpoort Project. The community were looking for employment opportunities with the Project requiring skills. This allowed ACWA to provide project specific training to the community. Another critical factor for effective community engagement is regular two-way communication post the engagement session. This process enables the concerns of the community to be addressed in order to constantly build the trust base.

Benefits of Effective Community Engagement

The benefits of effective community engagement, for any community, are effective SED. This could lead to the improvement in their immediate livelihoods across various fronts such as shelter, health and education and a step out of poverty. For the community of !Kheis this led to:

- Informal settlements being electrified
- Skills development opportunities
- Bursaries
- Water reticulation
- Computers for the high School
- Employment opportunities
- Improving the lives of primary children that had to walk through mountainous terrain to get to school and back
- Micro and small local businesses providing services to the project
- Direct access to ACWA Power

The benefits for the private or public sectors are immense especially in managing the various risks to the project or programme. For ACWA Power and the Department of Energy these included:

- Reduction in labour unrest by skilling and employing from within the community
- Reduction in labour unrests when employing from beyond the community
- Ability to manage expectations by understanding the real needs of the community and not overpromising
- The availability of cheaper inputs due to the training of small or medium sized local companies
- The availability of more relevant skills as the local community is trained as per the needs of the project or company

- The reduction of vandalism due to trust base that was built within the community
- The ability to manage perceptions of bias towards certain parts of the community by ensuring a consistent dialogue with all sectors of the community
- The potential for new business opportunities due to the improved economic status of the community

These inclusive community engagement sessions were one of the reasons that ACWA Power won the Africa Utility Awards: Best Community Project 2015. It was also one of the reasons why the Minister of Energy invited !Kheis community members to the SA Parliament to share their experiences.

The positive impacts of effective community engagement are effective socio-economic development. Effective socio-economic development leads to a path out of poverty and a path out of poverty leads to increased business opportunities and increased business opportunities leads to a better economy.

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