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Sri Lankan Journal of Real Estate
Department of Estate Management and Valuation
University of Sri Jayewardenepura

The Invincible Waste Pickers: An Occupational Analysis and Case for Integration in Municipal Solid Waste Management in Amritsar City, India

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Abstract

One of the most critical areas of concern in fast urbanizing India relates to the issue of municipal solid waste management in Indian cities. As per estimates (GOI, 2010) urban India currently produces about 70 million tons of waste and this figure is expected to touch an astounding 370 million tons in 2030 given the current spate in the consumption patterns and materialistic lifestyles. Given the current state of affairs it is estimated that only between 30-60% (Rouse, 2006) of the municipal solid waste generated in Indian cities is actually collected and disposed off by the urban local bodies. Out of this collected waste only a fraction i.e., 7% is recycled through composting or WTE (waste to energy) measures and the rest 93% inclusive of the recyclable dry waste find their way into the dumping sites where they are then rummaged by the ragpickers. Thus though the informal sector operations comprising the ragpickers and other informal actors are crucial to the waste management scene in Urban India yet the services provided by this sector is poorly understood or acknowledged and it ends up being projected as illegal and illicit and being looked down upon.

Given the context the research paper aims to highlight the other dimension of waste collection and management in urban India which is the informal waste collection focusing largely on the role of the waste pickers and small time informal scrap dealers. This is done by taking the case study of Amritsar city, which is an important historic centre and a metropolitan city in the state of Punjab, India.

Keywords: Municipal Solid Waste, Ragpicker, Waste Management

Prologue

India is the country with one of the highest concentration of poverty in the world with about 22% of the total population[1] falling below the government's official poverty line (GOI, 2013, p.3). The Human Development Report 2013 puts India at 136th rank in a list of 196 countries and in context of Human Poverty Index, India is ranked 134th in the list of 182 countries. The incidence and concentration of urban poverty in Indian cities is indicative of the fact that the policies and programmes of the governments have not really been able to effectively target and alleviate poverty owing to a number of reasons including the failure to understand the multidimensional nature of poverty.

The issue of urban poverty is intricately related to waste (Gupta, 2004). This statement indeed throws light on two aspects, one the fact that most urban poor live in deplorable conditions and second fact that India is home to 1.7 million rag pickers[2], earning $1 to $2 per day (Developed Nation, 2012). These waste pickers find livelihood by engaging in waste collection and recycling activities within the preview of the informal sector and in a way are responsible for managing an average of about 15

[1] Including urban and rural

[2] Rag pickers are unorganized informal sector workers who are presently not covered by any substantial labour laws. The Government has enacted the unorganized Workers Social Security Act, 2008 for the social security and welfare of unorganized workers but it stops short of clearly identifying the specific groups entitled to social security which by itself is a loophole in the act.

to 20% of the city's recyclable wastes that would otherwise add to the existing piles of waste and cause havoc given the current state of the formal municipal solid waste[3] management status in our cities. Popularly known as waste pickers this segment of urban poor is one of the most disadvantaged communities and are the poorest of the poor[4] as also a very vulnerable segment of the population, vulnerable to health hazards due to their scavenging activities as well as vulnerable to exploitation and social stigma. Despite their significant role in waste management in a city, this group enjoys no recognition, no job security or any form of social welfare safety net. This invisible section of the society is not the target of welfare schemes and policies of the government. Their livability is a stark reflection of the harshness and the vicious circle of poverty that inflicts them.

Methodological Framework

The paper uses the case study approach as research design. The case of Amritsar city is presented and the fieldwork for this research paper was conducted in August- September 2013. The paper relies on analysis of archives and government documents. In addition the study is based on a sample of thirty waste picker families drawn from two locations in the city. The data was collected by primary survey including direct observation and semi-structured interviews. The sample involves a heterogeneous composition of waste pickers by age and sex and seeks to

(i) Analyze their operations in solid waste management and identify occupational vulnerabilities afflicting this community

(ii) Analyze the possibility of their integration into formal municipal solid waste management systems.

Informal Waste Management Practices: A Country Overview

One of the most critical areas of concern in fast urbanizing India relates to the issue of MSW management in Indian Cities. As per estimates (GOI, 2010) urban India currently produces about 70 million tons of waste and this figure is expected to touch an astounding 370 million tons in 2030 given the current spate in the consumption patterns and materialistic lifestyles. This is attributed to the globalization outfalls which have accelerated the per capita consumption and consequently higher rate of waste generation. Consumption linked to per capita income has a very strong relationship with the amount of waste generation. As per capita income rises consumerist tendencies increase and so does the waste (Gupta, 2004).

The collection of waste ranges between 50-70 percent (Zhu et. al, 2008.) Another study (Medina, 2002, p.1) mentions a collection rate of just 50 percent in urban India. Out of this collected waste only 7 percent is recycled through composting or waste to energy (WTE) measures and the rest 93 percent inclusive of the recyclable dry waste find their way into the dumping sites where they are rummaged by the informal waste pickers and random and low rate recycling activity takes place as an informal sector initiative.

These waste pickers are a vital part of the informal waste recycling sector and in a way contribute to improving the city environs and aiding the ULBs in waste management in our cities though one might argue that this unintentional contribution is primarily due to economic compulsions. India's largest cities, the city of Mumbai has about 85000 waste pickers while the estimates in Delhi are put at 1 lakh[5]. In fact scavenging and waste picking activities are estimated to save a Class I city of the developing world at least US$ 23 million (ibid) annually due to lower import of raw materials and

[3] Municipal solid waste (MSW) refers to materials discarded in urban areas for which municipalities are usually responsible for collection, transportation and final disposal. This waste encompasses household refuse, institutional waste, street sweeping, commercial wastes and construction and demolition debris. In developing countries this also includes varying amounts of industrial wastes as well as dead animals and fecal matter.(Medina,2002)

[4] Based upon a survey of waste pickers conducted in Mumbai city by Stree Mukti Sangathana, a NGO working for their upliftment.

[5] Mumbai produces 8000 tons of waste daily and for Delhi the amount is 7000 tons.

reduced expenditure of the ULB on waste collection and disposal. Rousse (2006) mentions that in case of Delhi, the waste pickers, assuming that each earns about an average of Rs 50/day as a workforce have a daily turnover of Rs 50 lakh. Thus the informal waste management sector saves municipality considerable funds that would be needed to manage the waste currently handled by the informal operations. The informal sector dealing with waste is engaged in various types of activities like waste picking, sorting, recycling and in some few cases door-to-door collection, composting and recycling recovery.

The informal waste managers can thus be described as important stakeholders in the waste recycling process as their presence allows for a very thorough recovery of recyclables. However these stakeholders, the waste pickers in particular earn very low returns particularly women and children who are usually economically exploited by the small and medium scale scrap dealers. A majority of the waste pickers enter this occupation to escape chronic rural poverty as also due to lack of skills required in other occupations. For most first time rural to urban migrants waste picking is often the only informal occupation that can absorb them and give them a small economic respite to survive.

Also, the facilitation of private corporate in service delivery under the liberalization mode of the Government has left the informal unorganized sectors previously engaged in such ventures with a very real threat of displacement and loss of livelihoods. While the formal private sector has emerged on the MSW management scene only in the last decade, the informal private sector has been a major stakeholder throughout the last many decades, though largely unrecognized and therefore considered illegal. Collection of solid waste by the informal sector is estimated at 15-20 percent and an estimated one million urban poor work in informal waste management sector (Rousse, 2006, p.1). However the Municipal Solid Waste (management and handling) Rules 2000 and solid waste management initiatives sideline the informal sector. Even the very recent Draft Municipal Solid Waste (management and handling) Rules 2013[6] give but a passing reference to the informal sector without proposing anything substantial to integrate the informal waste sector. Thus Public policy so far has been overlooking the existence and the role of the informal waste mangers.

Though the informal sector operations are crucial to the waste management scene in Urban India yet the services provided by this sector is poorly understood or acknowledged and it ends up being projected as illegal and illicit and being looked down upon. The waste picker being at the bottom of the rung of the informal sector waste recycling operations is the biggest sufferer economically as well as socially. Given the current trends towards privatization of the solid waste management in Indian cities along with options of adoption of western management models and with no approach to integrate the informal sector operations into these neo-models, the informal waste managing community particularly the waste pickers face a severe danger of losing this informal occupation as well.

Municipal Solid Waste Management in Amritsar: A Longitudinal profile

Located in Punjab State in India, 27 kilometers from the international border with Pakistan, Amritsar is the second largest City in Punjab and plays a multifunctional role including that of the political capital, being the centre stage of the Sikh religion. Amritsar has risen to be the 2nd metropolis in Punjab with a population of 1,132,761 and areal extent of 14237.2 hectares, is ranked 44 in the list of 55 metropolitan cities of India as per census 2011. Being the seat of the sikh religion and owning to the location of the golden temple, the city attracts tourists from all over the globe and has also witnessed a spate in development activities in the last decade owing largely to the liberalization

[6] The Ministry of Environment and Forests (MoEF) released draft rules on 29/8/2013 to the public domain to invite suggestions/objections. Once implement the rules 2013 shall over rule the existing compliance rules, 2000 and it will become mandatory for municipalities to abide by them.

measures and a proactive political economic scenario leading to planning and implementations of a large number of infrastructure, commercial and residential development projects in the city.

Coming specifically to the municipal solid waste (MSW) scenario, the city generates about 600 metric tons of MSW per day. The overall management of the solid waste management service is the responsibility of the Medical Officer of Health of the Amritsar Municipal Corporation (hence forth referred to as AMC). The service is managed by the Medical Officer of Health, assisted by the Assistant Medical Officer of Health. There are currently 1196 sanitary workers, 20 contractual workers, 20 Sanitary Inspectors and 5 Chief Sanitary Inspectors. It is observed that the organic waste constitutes a highest amount i.e., 55% followed by inert debris (25%). The waste has 55% moisture content and a calorific value of 1500 kcal/kg.

Historically, the waste management operations have been the domain of the Amritsar Municipal Corporation (AMC) as one of the important civic duties to be performed by it. However the corporation was found wanting on all fronts when it came to discharging the responsibility efficiently looking at the piles of accumulated garbage in the city. AMC did not carry out any pre-treatment of the waste except direct dumping of waste at the dumping site measuring 8.1 hectares located dangerously close to the city's grain market and residential areas in vicinity. The collection levels were only about 50-60% and no provision or effort was made to segregate the waste or recycle it and dispose of the remaining in a scientific manner. Consequently the city displayed a very poor hygiene condition and was a negative factor for a holy city known for its tourist capabilities. Looking at the state of affairs in terms of waste management and the inability of the AMC to handle it by itself and also the same issues in the other cities of Punjab State, led the Government of Punjab to take initiative to go in for private sector participation in MSW management services in the State. The initiation of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and inclusion of Amritsar city also gave a much needed impetus towards appropriate management of MSW in the city.

The resolution for effective MSW management and its scientific disposal was passed by the AMC on 27/03/06 and the Expression of Interest was published in different newspapers in July 2008 following which in Sept 2008 the successful bidder M/S Antony Waste Handling Cell, Pvt Ltd was allocated the work to be undertaken in Phase I i.e. collection, segregation, storage and transportation of waste to the disposal site. The company continued service delivery for 3 years before it withdrew its operations in August 2012 citing the non-payment of dues by the AMC to a tune of 1.5 crores as the primary reason for withdrawal. Finally after nearly a fortnight of withdrawal with no garbage collection, following the high court order, the AMC had no option but to again deploy its own meager resources[7] to manage the city garbage and the results are far from satisfactory. Recently the AMC (The Tribune, 2014) has again prepared a tender for attracting private bids to manage its waste.

Issues with current waste management practices

i. Segregation of recyclable waste at source is not practiced in the city. Storage of waste at source is not fully taking place as people prefer to dispose the waste as and where it is generated.

[7] The AMC collects the waste using unspecified vehicles such as the tractor trolleys. 40 trolleys have been deployed including 15 from private vehicle contractors at the rate of Rs 1000/day. The vehicles are not meant for waste collection and therefore garbage spilling is a common feature during collection. The AMC has also hired additional contract labour at the rate of Rs 34/day. Both the trolley owners and the contract labour express dissatisfaction at the payment levels and the AMC faces irregularities on this account. There is a shortage of at least a 1000 workers and the AMC does not have the fiscal resources to fill vacancies. The result is visible on the state of garbage collection.

ii. There are 2 sanitary workers/1000 population in the city as against the requirement of at least 5 sanitary workers/1000 population.

iii. Except for a small part of the city, there is no proper system of door-to-door collection of waste. Community bin facility given to the citizens is not efficient for depositing the waste. In absence of the facility of door-step-collection and inadequacy and in appropriateness of community bins for the deposition of waste, people throw the waste on the vacant spaces, streets and drains.

iv. The bins and larger storage containers are open and invite stray animals and lead to further unhygienic conditions.

v. No arrangement of primary collection of hotel and restaurant waste is made. Hotels and restaurants therefore, dispose of their waste on the streets or into the municipal bins that are usually overflowing.

vi. Vegetable, fruit, meat and fish markets do not have adequate waste storage containers with the result the market waste is thrown in open space causing unhygienic conditions in and around the markets.

vii. At least 30% of the city population resides in slums (as per Amritsar master plan 2010-2031) and these areas have no collection or storage facility.

viii. The transportation of waste is done in open trucks and open tractor trolleys causing nuisance to the citizens and contributing to environmental degradation.

ix. The city does not have a sanitary landfill. The waste generated in the city is presently being disposed of in an unscientific manner in an open dumping ground and other unauthorized disposal sites that are in vicinity of residential areas.

x. Despite the existence of legislation, Solid Waste management Rules 2000 that makes provision for municipalities to deal effectively with solid waste issues, the AMC has not taken any of its provision in account appropriately and continues to deal with the issue of solid waste in a most unscientific manner[8].

xi. No effort by the AMC on its own has been made to initiate composting, recycling or any other useful ways to deal with the solid waste.

xii. A move towards new technologies has been made by the AMC wanting to use a waste to energy plant(WTE)[9] for managing the city waste and generating power from garbage with an investment of 78 crore rupees(The Tribune, 2013). However this is a move without examining the issues involved. The moisture content of the waste is high and the calorie value of 1500kcal/kg means that auxiliary fuels would have to be used and the cost per ton of MSW is 6.62$ approximately (Jain, *et.al*, 2005). Which means if approx 300 tons MSW /day was to be incinerated it would cost the AMC 1986$/day and 59580$/month. This does not seem to be the viable option for waste management in the city.

Informal waste management practices: Unrecognized operations

Though there is no formal count available, based upon information gathered from surveys it is estimated that there are anywhere between 3000-3500 waste pickers engaged in informal waste collection and recycling operations in the city and about 5000 people find employment in the informal waste management sector in the city. All recycling operations in Amritsar city are undertaken by the informal sector. This sector includes waste pickers, small middlemen, larger middlemen and finally, the reprocessors. This sector is arranged in a table top pyramid with waste

[8] The instruction to the municipalities mentioned in Schedule I,II,III, and IV of the MSW Rules 2000 have in no way been implemented by the AMC.

[9] Not all WTE technologies especially incinerator based are suitable for Indian conditions since Indian MSW have low calorific value and high organic matter leading to high economic and environmental costs in incineration based technologies(CPCB,2005)

pickers at the bottom of the pyramid and forming the backbone of waste collection. Next are the small middlemen, (kabariwallas) who buy the waste from these waste pickers and sell it to larger middlemen who deal with specific items and materials who then supply waste to the recycling units. There is also an informal operation where the kabariwalla buys directly from a household by paying a small amount for the recyclable waste. At an average a waste picker spends about 10-12 hours looking for and filtering waste. There is a territorial route demarcation by the waste picking community in some parts of the city while in other parts there is no such thing. The waste is collected from various sources; landfill, dumping sites, garbage cans, AMC containers and also in some localities, directly from the households. It is then filtered through manually in the areas where the waste pickers stay. The waste pickers collect items based upon its recyclable demand and at least twenty items including plastics, paper, iron, cloth, animal bones, leather, etc are collected by them.

Occupational Analysis

Two locations inhabited by the waste pickers were surveyed and the locations range between 1 to 2 acres and are situated along the GT road bypass and Rasoolpura Kaler. Location-I houses about 40 families while in location II there are about 80 families. The waste pickers come from Bihar, Maharashtra and West Bengal and have been in the city from 1 year to a maximum of 30 years. The waste picker household comprise of an average of 6-7 persons. 80% of the economically active members of the community were engaged in waste picking and sorting work while remaining worked as rickshaw pullers, labourers and domestic help in case of women. 67% household had active children waste pickers and 63% reported active waste pickers above 60 years. 74% cited escape from chronic rural poverty as a reason for adopting this occupation. 16% mentioned it as being due to unskilled and illiterate for any other work and 10% said it was due to their personal circumstances[10].

Going by the Suresh Tendulkar Committee estimates of below poverty line as Rs 33.30[11] in urban areas or a spending of less than Rs 5000 per household per month (Hindustan times, 2013) a majority of the waste picker households fall below the specified limit indicating poor earnings. 91% of the rag pickers felt that they are economically exploited by the scrap dealers and middlemen who give them a trifle amount but sell the material at a higher rate to the wholesale dealers and recycling units. The rag pickers stated that the large wholesale dealers and factories did not accept directly from them since they did not accept below 50 kgs of each type of waste and to collect this amount may take a rag picker household up to two weeks or more. Currently they sell the material to smaller scrap dealers and are paid Rs2.50/kg for plastic bags, Rs 10/kg for other plastic waste, Rs 8-14/kg for iron waste, Rs 5-8/kg of paper waste, whereas the dealers sell them further for at least three-five times the price given to the rag pickers. When asked about protesting against this economic exploitation the rag pickers lamented that the dealers asked them to sell where they could get more. Because of this insecurity the waste pickers do not protest and go on receiving a small amount for 8-12 hours of hard labour in dangerous working conditions.

With respect to health and education the rag pickers seem to belong to the most underprivileged class. The total illiterate adult rag pickers comprise 64%, the semi-literate (primary school dropouts) comprise rest 36%. Amongst the children(below14 years) only 24% are school going, as high as 38% are primary school dropouts and 38% have never been to school. Economic compulsions are responsible for the early and high rate of school dropouts. In terms of the health care the rag pickers were found to be an extremely vulnerable group. 49% had suffered from a major illness[12] in past 5 years and 55% suffered from chronic respiratory disorders. 46% reported skin diseases, 62%

[10] Such as having run away from home, orphaned, etc
[11] For a family of six the total amount to Rs 6000 approx based upon the Rs 33.30 norm.
[12] Such as asthma, diarrhea, tuberculosis, etc.

reported persistent physical weakness, 26% reported headaches and nausea and 39% reported continuous body pains such as back pain. 66% reported to have had injuries from cuts while picking or sorting waste. Hence a significant part of the health vulnerability of the waste pickers can be related to their occupational hazard and poor livability conditions. The waste pickers also reported low levels of protective security with harassment by police/others, physical violence and abuse and social stigma. 69% of the waste pickers expressed harassment by the police/ gang lords/ people from higher stratum and at least once they had experience physical abuse. All the waste pickers display a low self-esteem and perceive them self as a deprived and a socially secluded community again due to the nature of their work.

Threat from Privatization

In matters of solid waste management in the city, the contribution of the informal sector is totally overlooked and no effort has been made by the AMC till date to utilize the potential of this sector. The private sector has also totally over looked the existence of the micro enterprises in waste management. If the stage II of the project had been implemented at least 5000 people including the waste pickers would have lost their livelihoods since there was no thought of integrating them into the waste management setup. After the coming of the private sector operations some of the informal waste pickers who were engaged in door to door services in some parts of the city on a nominal payment of Rs 20 to Rs 50 per month lost their meager source of income after the company began operations[13].

Possibilities for Integrating waste Pickers

As can be inferred from the above analysis, the waste pickers are a vulnerable community who render yeomen service to the city by collecting and recycling waste. However they are discriminated upon and not recognized as an important stakeholder in the city waste management processes. Equally alarming is the move towards complete privatization that shall take away the livelihoods of the waste pickers by cutting them off from the waste which is their very livelihood. Also it is a well-known fact that the waste quality in Indian cities does not cater for application of capital intensive technologies such as waste to energy (WTE) whereas low cost options of composting, reuse and recycling seem best suited to the city context. It is stressed that informal waste collection system should be central to any proposal to be implemented for solid waste management in the city. The waste collection, transfer, separation, recycling and/or disposal activities of informal waste workers constitute economically valuable services that must be recognized by the AMC.

The AMC should as an initial step towards integrating the informal sector operations is to provide organizational and technical support to the waste pickers through the formation of waste picker co-operative societies or micro-enterprises divided into 66 sanitary wards falling under the already delineated 24 sanitary divisions in the city[14]. The existing staff of the AMC at the level of sanitary inspectors could initially focus upon making source segregation in their sanitary division a mandatory exercise by leading an awareness campaign amongst the residents of their respective divisions.

The waste pickers(other than children) already operating in the sanitary divisions should be registered and designated as official domestic waste pickers in addition to the sanitary workers already working in those divisions who will not be collecting waste from houses but do street cleaning and collection outside the homes.

[13] Based upon a interview of waste pickers out of which 4 reported that some of their acquaintances and 2 from those interviewed had lost this source of income after the company began operations.

[14] Corresponding with the administrative wards in the city

The waste pickers will be responsible for collecting waste directly from homes in a mobile cart with two containers separating the organic from the dry and recyclable waste. They will transport the waste to the transfer station in that sanitary division. The recyclable waste can be retained by them while the organic/ other waste would be deposited at the transfer station. This would enable them to collect waste at source, thus minimizing the time spent in searching through garbage piles and being exposed to dangerous conditions. The waste pickers would be entitled to get a fixed amount fixed by the municipality directly from the households and also be able to make money from recycling the waste. Also the health risks could be reduced by getting recyclable material at the source, the need to visit dumping grounds would be reduced.

There would be no requirement of community waste containers in residential areas if the waste could be collected from source. However in areas of commercial activity this would continue to be required but important would be to design them in a manner that waste from commercial areas also gets segregated within the same container. Designating transfer stations in each sanitary ward would be required as a priority as these would be the collection points from where waste would be transported further.

Small loans could be made to individual entrepreneurs or to groups of informal collectors organized as cooperatives to purchase locally made collection vehicles. Alternatively they could be rented out by the municipality for a nominal amount.

Once the organic waste is deposited by the waste picker at the transfer station, it could be collected by the private contractor or the municipality vehicle in case it wants to be directly involved in composting activity. The organic waste could be transferred to a designated site where windrow composting or other form of composting could be done. For the success of the composting programme it is important that the composting must be market-oriented. Also rather than one centralized composting unit there could be more decentralized units run by private operators. The municipality could give the organic waste to a private entrepreneur and could also charge some amount/ton of organic waste depending upon the financial profits that the he is likely to make.

The inert debris is usually lying on road sides and should be directly taken by the municipality trucks from there and transported to a site for depositing inert debris. However it is assumed that a portion of inert debris is recyclable and the option of having private construction companies or small time contractors have access to the inert debris might be a good solution to cut down on the quantity that will finally go into the dumping ground.

The final refuse to go to the landfill would be significantly reduced through the model as above. It might then be feasible for the AMC to try option of a sanitary landfill for duping rest of the refuse which is absolutely not recyclable.

Conclusions

Based on the study it can be summarized that Informal refuse collectors indeed render clear economic and environmental benefits to society, and their activities should be improved and supported. An integrated system could help solve the seemingly intractable problem of municipal solid waste management in an economically viable, socially desirable and environmentally sound manner. Thus the role of the waste pickers needs to be thought about in context of comprehensive city level waste planning and management wherein researchers and waste managers can further examine how current practices that contribute to waste reduction, recovery, reuse and recycling can be integrated into the present systems.

Based upon the above model suggested for effective solid waste management in Amritsar city it is suggested that this model be tested for its application by practically applying it in the city. The adoption of a waste management model of the nature as above mentioned has the potential to create jobs, reduce poverty, extend the collection and improve final disposal of wastes, minimize public investment on personnel, equipment and facilities, reduce pollution and risks to human health and the environment.

Finally it may be said that the above mentioned suggestions need more exhaustive study. However whatever be the nature of the policy interventions initiated for waste management in a city it is my argument and belief that given the current role of the informal sector in city waste management operations, this sector should not be excluded while formulating an intervention. This sector needs to be embraced and not displaced and if interventions pertaining to waste management exclude this group, their very livelihoods would be lost and so would the ideology of pro-poor growth so vocally being hyped by the government.

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