New Perspective on Post-War Livelihoods Revival in Swat: The Role of Tourism

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Abstract

Can well-paying employment in post-conflict regions deter terrorism and recruitment in the militant organisations? This article attempts to answer this complex question in the context of Swat, Pakistan. Our primary data of 275 households from Swat reveals the dynamism of district's pre-conflict economy. Empirical estimates with simulation modelling—which assist to understand future changes—suggest that when jobs emerge, and wages and profits increase in non-rural businesses as a result of infrastructural investment by the government, underemployed and unemployed labour leaves the rural sector—where the militants mostly recruit fighters. That is, the revival of non-rural livelihoods acts as a barrier to joining militant organisations like the Taliban. Without such revitalization the likelihood of the resurgence of militancy is high, as the current media reports reveal. Very recent targeted killings and their acceptance of responsibility by the Taliban militants are strong evidence of militant resurgence and recruitment in Swat.

Keywords : Employment, Tourism, Taliban recruitment, Civil war, Post-conflict Livelihoods, Simulation modelling

Introduction

Ninety percent of the civil wars in the decades from 2000 and onwards occurred in countries that al-

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ready had a history of war (Gurr et al., 2010). A very recent example is Afghanistan, where the insurgency lasted about 20 years, despite massive direct foreign interventions that included development initiatives and the formation and training of an Afghan army. The insurrection's outcome now is the control of almost the whole country by the Taliban. Moreover, as groups like IS–K have recently shown with their attacks, violent conflict is very likely to continue in some form in the region. The worsening economic conditions, displaced population —igniting anger and fear— are likely to provide a fertile ground for extremist militant recruitment. That remains the instance not only for Afghanistan but dozens of conflict regions today, and seems unsolvable.

These conflict traps, and conflict more broadly, have occupied an emerging and increasingly important strand of the literature. Economists have discussed the peace dividend, in which an end to armed conflict confers a positive externality to a country generally. A reduction in international and regional tensions allows countries to devote a larger share of government spending to non–military activities (Collier, 2006 ; Davoodi et al., 2001). It would follow that, should these spending activities include infrastructure such as roads and electricity, peace would also establish a channel for the growth of key activities like tourism—in tourist friendly regions—and for local employment opportunities that relate to them.

Yet what of the reverse causality—could an activity such as tourism in itself lead to reduced armed conflict? Here the literature is much thinner. Pratt and Liu (2016) find weak evidence that tourism promotes peace (and find much stronger evidence that peace promotes tourism). But their analysis is based on a relatively feeble premise—that when tourism links people, people like each other more, and this reduces conflict.

Such a view lacks a strong theoretical foundation. Indeed, closer contact between (previously hostile) populations could worsen conflict, as age–old prejudices are 'confirmed' when opponents meet. More importantly, it is not certain that it is the contact and consequent understanding between people *per se* that promotes peace. Perhaps the contact promotes market transactions and livelihood linkages between people, which in turn promote peace. It is this market–based, transactional approach that we explore in this article. We provide a case study of Pakistan's Taliban occupied area—Swat—in which we show how key infrastructure that promotes livelihoods can act as a deterrent to militant recruitment. To demonstrate this, we develop a simulation model of markets in which competition for resources, particularly labour, influences the returns to peaceful labour—within the urban–based tourism industry of Swat. This shift of labour and livelihood revival reduces the economic incentives to join militant groups such as the Pakistani Taliban, despite their emphasis on religious beliefs.

Related considerations such as Ryan (2003) and Yang, Ryan & Zang (2013) inform our simulation model, especially the structural composition of the regional economy (i.e., the size of the tourism sector relative to other sectors that compete for the same resources). Furthermore, how fast the local tourist economy can bounce back from earlier conflict, and the role of infrastructure in assisting the economic rebound.

The transition from war to peace entails a high–risk environment, where post–conflict reconstruction is a transformation process from destruction and conflict to economic recovery ; i.e., a return to

a 'normal' development trajectory (UNDP, 2008). The path to a long–lasting peace, among other things, typically includes employment–generation and labour movement towards more productive uses. Thus, this study investigates how household livelihood opportunities may emerge from positive infrastructural shocks. We endeavour to answer the question : can improved livelihood options, including employment and rising wages largely in the urban based tourism sector in a tourist friendly region—Swat— decrease the chances of recruitment into militant organisations, and thus decrease armed violence?

Our work sits within the rapidly emerging literature on post–conflict economic policy, which refers to the 'distinctiveness' of conflicts and emphasises context–specific approaches (Brown, Langer & Stewart, 2009 ; Collier, 2007 ; Kreutz, 2010 ; UNDP, 2008 ; Walter, 2010 ; & World Bank, 2011). More specifically, the economic sequel of violent conflict creates constraints and opportunities which are distinctive in different regions and countries. This article contributes to treat urban based employment growth as a catalyst for peace, all within a fitting and region–specific policy framework, by reducing incentives to join militant organisations in the first place.

This paper will unite two results of the literature, namely that (1) infrastructure supports the growth of employment, and (2) tourist destinations have a large potential for employment growth. We suggest that financially–gainful employment reduces the incentives for vulnerable populations (in our case, underemployed and unemployed rural male workers) to join terrorist organisations—thus reducing the capacity for and incidence of armed struggle. We show how the key resource—labour— shifts from one sector to another as wages or profits change across sectors. Specifically, how a rise on relative wages (or profits) can induce labourers to relocate to urban–based tourism enterprises and away from the rural, agricultural sector that has been the breeding–ground for terrorist recruitment in Pakistan's Swat district. (In contrast, whereas studies like Becken and Carmignani (2016) argue that increased tourist arrivals promote peace and find linkages of tourism with development, their analysis is undertaken with country–level examples and omit focusing on any conflict sub–regions).

Background

The Swat district was a renowned tourist–friendly region in Pakistan. The *Tehrik–e–Nifaze Shariat–e –Muhammadi* (TNSM) meaning 'the movement for enforcement of the law of Prophet Muhammad' started multiple radical religious propaganda activities in the region in early 2000. They campaigned to wipe out dissent, alongside other militant activities, and recruitment of local people and their militant training. They started armed attacks on business locations and blowing up infrastructure like power supplies, bridges, government offices, and female educational institutions—declaring them un –Islamic (Torwali, 2013). Using force, they got full control of the district. Finally, the state responded and a full–scale civil war started between the Taliban and military forces in May 2009. The war ended after the Taliban retreated and fled Swat.

Post–war resettlement efforts and policies undertaken by the Government of Pakistan and international donors include welfare assistance, housing reconstruction grants, subsidised inputs for agri-

culture, and reconstruction of some infrastructure. However, an integrated economic development plan to enhance sustainable livelihoods is non–existent. The post–conflict development fails to emphasise the accumulation of assets and the creation of livelihood and employment opportunities. Such factors, in the context of conflicts, could provide strong incentives to lay down arms or even not joining militias (Berdel & Keen, 1997).

The post–conflict household assistance in Swat from government and other development organizations has been inadequate both in quantity and coverage—as found from our household survey analysis. The higher incidence of households denying receipt of welfare assistance reveals the limitations of these interventions. Our study offers the sustainable livelihood approach as a possible way to reduce the likelihood of rank–and–file recruitment into the militia in Swat.

Devastation of Agriculture and Tourism

More than 70 percent of the population in Swat district relies on agriculture, directly or indirectly (ADB & World Bank, 2009). The climatic and geographical conditions of the district make it very suitable for fruit farming, including apples, peaches, plums, apricots, and persimmon. Walnut trees are another high–income earning source in Swat. Produce sales provide instant cash and many wage work opportunities for related agricultural activities. Thousands earn their livelihood by spraying and pruning trees, and packing and transporting fruit. The militancy and civil war affected farms and orchards, and the resulting displacement left them unattended and unprotected. Although some farmers were able to pack and send products to markets, damaged roads, bridges, risky movements and curfews resulted in higher transportation charges that further reduced net profits.

The livestock sub–sector suffered most, including sheep, goat and cattle farming and domestic poultry. Households abandoned their animals when they had to move, and many of those animals subsequently died or were slaughtered by the militants in the area. During the field visits the locals informed that if they wanted to sell their animals, traders made 'distress sales' and bought them at around 10 to 20 percent of their market price. The survey data in Swat confirms that few households reported livestock holdings in the post–conflict period.

Shelling, aerial bombings, militants and military movements severely damaged crops and fruit and irrigation sources like canals, tube wells, dug wells and flood embankments. Losses of crops, particularly orchard crops, are difficult to quantify in the short term. Orchards, if they degenerate, take years to recover. The farming patterns of orchards are unique and have special maintenance requirements. Regarding damage to agriculture, both militants and the military ruined crops and trees in pursuing their objectives.

Tourism

Tourism was a dynamic and major sector over the past three to four decades as a source of employment and income generation in Swat. The tourism–related employment network includes the vast transport sub–sector, taxi drivers, tour guides, plumbers, electricians, and related shops. Providing mobile phone services, internet cafes, local handicrafts, electronics and routine daily items. There were around 400 hotels providing accommodation and food services to tourists. More than 45,000

workers were associated with hotels and restaurants. The growth in trading of imported Chinese goods in Swat further boosted tourism. Aside from complete destruction, the overall hotel and food industry and related workforce suffered in multiple ways. Average salaries in the hotel industry decreased by about 50 percent, expenses on hotel security increased, and the number of permanent staff was reduced by up to 25 percent. Casual staff was the worst affected : on average their number decreased by 50 percent in the hotels (Ali et al. 2012).

With fewer buyers—sellers had to decrease their prices, particularly for locally produced handicrafts. These include embroidered clothes, the famous Swati woollen shawls and decorative items made from marble and other locally produced stones. The female work force—working from home—was also involved in the manufacture of traditional Swati embroidery, knitting, and dress-making. This had an overall adverse income impact on households involved in the production and sale of these products, to tourists.

Related Research

In support of our approach for Swat, several studies consider negative changes in income and economic output among local populations as incentives to join rebel organizations and to support radical agendas. Fjelde (2015) argues that falling commodity prices in an agricultural-based economy are more prone to support rebellions than one based on wage labour. Focusing on the Naxalite-Maoist violent conflict in India, Gomes (2015) and Baroooha (2008) consider that vast inequality in land ownership and lower growth of poor household income are key correlates with violence. Rebel movements develop mechanisms to economically reward those who join such rebellions (Lichbach, 1998 ; Popkin, 1988). Nevertheless, deciding to join a radical religious militia in a violent conflict zone is complex and is difficult to term solely as economically motivated. Even so, the careful use of modelling and economic analysis may be productive, mainly for improved understanding of the dilemmas that young people and adults face in conflict zones.

Our research is based on several interconnected findings in related works. For example, Bhatti (2015), Dourine et al. (2010), Ibanez & Moya (2009), Justino (2006, 2009), and Ritcher (1999) all stress supporting pre-war competitive sectors, increasing the asset base of households and improving infrastructure, to promote linkages to prevent the outbreak of violence. Moreover, the household, post-conflict initiatives require understanding of pre- and post-conflict local economic dynamics, a market economy and an improvement in value and supply chains of local products (Bhatti, 2015). We model these in the following sections, using Swat as our case study and data source.

Our Data and Modelling Post-Conflict Livelihoods

Low income from agriculture and tourism, unemployment, enormous increase in health and education expenditure, and losses of physical, natural and financial capital, are among the major constraints identified from our livelihoods' survey data in Swat. For the revival of livelihoods in Swat, given an initial expansion in tourism businesses, a simple simulation model of economic interactions

between agriculture and tourism is developed below.

Data

Our household survey was completed with 296 completed questionnaires. Five out of seven tehsils (sub–districts as administrative units) of district were selected as research sites. These tehsils include, Babozai, Barikot, Charbagh, Khwazakhela and Matta. Each tehsil was covered by locally hired enumerators (who were well–versed in local Pashto language). The far northern Bahrain (which includes the famous tourist destination, Kalam) and the Kabal tehsils were excluded. The former is 60 kilometres from Mingora (major town of the district). Its distance and dilapidated roads, military check posts and unavailability of public transport after sunset made it difficult for commuters to make one–day return trips. The latter, at the time of this survey, was inaccessible and unsafe due to on–going targeted military operations and occasional combat. The household data cover the asset portfolio, income and consumption—including food and non–food—and expenditure on health and education. The survey reveals that agricultural production is the dominant livelihood choice of 33.1 percent of households—the mean income of those households is the lowest among other livelihood activities. Agriculture provides much subsidiary wage work such as planting saplings, pruning, harvesting, picking, weeding, packing, and drying of fruits. Self–employment in business constitutes the second major livelihood choice, forming the major income source of about 27 percent of the sampled households. Swat, an all–year–round tourist destination, creates multiple business opportunities for the local population.

Simulation Modelling

Simulations, as approximations of real–world situations, have the important advantage that they can show how variables and environments can evolve over time. New models are frequently inspired by real–world dilemmas, where a range of competing interventions or policy responses may need to explore. At times the policy recommendations may be surprising. Lim and Saw (2006), for example, use a simulation model to show that removing landmines from roads may be a faster and more effective method of reducing landmine casualties than clearing mines from people's farmland in Cambodia. By modifying key variables and rigorously predicting their impact on people's behaviour, simulations allow researchers to move beyond a sole reliance on econometric methods (which tend to focus only on past events).

Particularly for the livelihood analysis various studies use simulation models. Among the recent ones Noldeke et al. (2021) probe the change in farming choices and their link with livelihoods in rural Indonesia. Lesorogol and Boone (2016) look at the consequences of privatisation of land on livelihoods in a Kenyan suburb. Garedew et al. (2012) study possible interactions between rural livelihoods, income and population for rural Ethiopia. Kristjanson et al. (2005) observe changes in the semi–arid areas of Kenya, while Gladwin et al. (2001) investigate the multiple livelihood strategies of African women farmers and their implication on food security. Grasso (1998) focuses on labour allocations in forestry and fishery production as a trade–off in mangrove ecosystems. Similarly, Ro-

horua and Lim (2006) model sustainable livelihoods in Tonga and the labour movements between the fisheries and tourism sectors. Tourism impacts are quite complex to capture in econometric models, as Taylor (2010) observes. But potentially, household data can be very useful to carry out simulation analysis in tourism areas, which is the approach that we undertake. Several studies use households as major data source in simulation analysis to observe the impact of tourism on local economic activities and institutional development. These include Carlsen & Heckbert (2012), Taylor et al. (2008), and Hamilton & Tol (2006). We emphasize, aligning with Fernando, Bandara and Smith (2013), that pre-war thriving sectors—like tourism and interrelated business activities in Swat—can be instrumental in employment generation and economic growth in a war-torn region.

The Modelling Framework for Swat

The simulation model adopts a five-year time horizon (i.e., 2012–2016) for prediction purposes. The five-year predictions could then be compared with actual outcomes as they eventually played out in Swat. Our model of inter-sectoral interactions highlights the salient issues associated with infra-structural development. Infrastructure includes main roads, bridges, and so on ; those serve to con-nect businesses and people, and includes educational and public health facilities. The tourism sector is wide-ranging—including of hotels, restaurants, retail shops, transport and multiple interconnected small tourism businesses—as explained in an earlier sub-section. This accumulates the businesses in the model as tourism sector. Agriculture relates to food inputs or outputs, including farming—subsistence crops and orchards—forestry, livestock herding and the process of transportation of products from farms to markets. To simplify the model, the aggregated variable agriculture is considered to consist of orchard and other farming types. The basic model is summarized in Figure 1, which assumes that militants are not able to destabilize peace (either through talks or force). Major routes are safe and in working condition, leading to increased and rapid access of available food production to market, thus increasing the income per worker.

Here we make two key points : (1) as labour moves away from agriculture into businesses, the pool of underpaid rural labour available to be recruited by militants diminishes ; and (2) the catalyst for the labour shift is the provision of infrastructure, such as roads, bridges and renovation of tourist attractions.

Our model presents a 'hypothetical economy'. It looks at the change in labour allocation between the agricultural and tourism and related sectors in a 'safe' and peaceful environment. The improvement comes from the restoration of infrastructure, leading to increased and rapid access of available food production to market, thus increasing the income per worker. This would include the roads from Mingora to Khwazakhela and Matta in upper Swat, which are major centres for orchard farming, and includes the all-important Mingora–Jambel Road.

With improved infrastructure, produce can be sent to non-local markets provided prices are better there. Simultaneously, costs decrease particularly for transportation, both locally and further afield. Better infrastructure decreases transit time, which is crucial for fruit with short storage life : alongside is a more competitive transportation network. The farm profits per farmer (or farm worker) in the sector would depend on the cost of inputs, production, and market prices. If crop prices in-

Figure 1 : The Modelling Framework
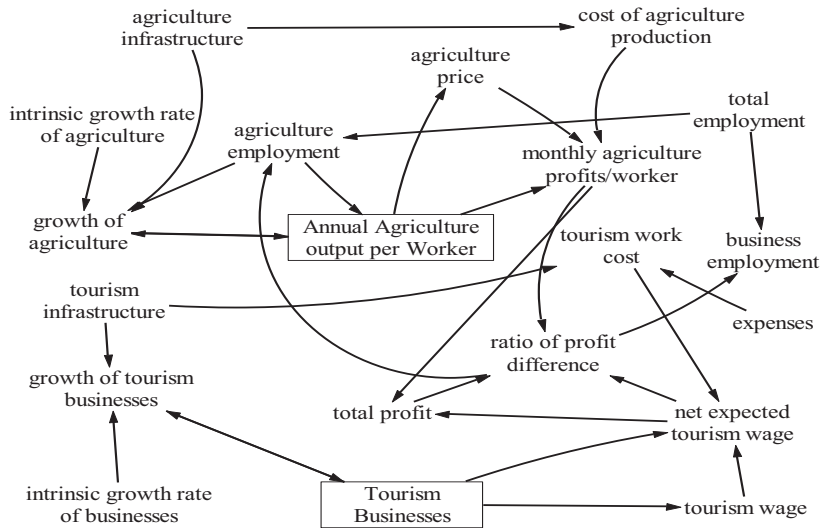
crease, the capital gains may be invested in buying more tools or equipment, which help in increasing crop productivity and further profits for farmers/farm workers.

The labour force in our model makes decisions to shift between sectors based on relative profits or net wages. Net returns from tourism–related activities depend on labour availability and costs. This also depends on farm production and profits : if these decline, the surplus labour shifts to the expanding tourism sector.

Workers will look at the net expected wage, as there are still constraints on finding work and on the nature of the available work. The expected wage in businesses would affect decisions about sectoral movement (Lim & Saw, 2006). The expected wage refers to the net tourism wage times the probability of getting a job, where the probability directly relates to the growth of tourism businesses. As found from survey data, about 72 percent of household members have basic literacy skills and this may positively affect the probability of getting jobs.

We assume that as surplus labour arises in agricultural production, its re–location, or engagement in newly created jobs will result in additional income support to the household. If some of capital were invested in more farm inputs this would mean that profits per household are likely to be maintained, offsetting any potential loss from family labour diversification. If prices of agricultural products increase, profits may be enhanced by increased production resulting from more inputs and better management practices.

Modelling Parameters

The simulations set the initial parameters such as agricultural production, profits per farmer (or farm worker), and the cost of production. The data for prices are cross–checked with market prices. However, the market prices are higher than the prices which growers receive. These include addi-

tional costs of packing, transport and profits of the traders. In agriculture, more financial remuneration is obtained from orchards of apples, peaches, and plums. Our model takes growth in agriculture as subsequent growth in orchard farming and production.

Average agriculture income (US $943) was estimated from the survey data. Among the tree crops, apples, peaches and walnuts have comparatively high market prices, and yields also vary for different fruits. For example, pears usually have a higher per/acre yield, while walnuts result in more profits. With a constraint to have uniformity in the model, the fruit price based on data is calculated with an average production of 2.1 metric tonnes per acre. Income per acre is divided by production per acre (943/2.1), giving an average income of $450/tonne per acre per year.

An exact estimate for the number of tourists visiting Swat is hard to make. However, locals and hotel owners informed us that in peak times there used to be 100 percent occupancy in the hotels. Tourist spots and hotels are spread all over the Swat district including properly built resorts, and restaurants spread alongside the river Swat, offering freshly–caught fish–based dishes. Workers in tourism businesses include those who travel from adjoining areas and return home after work. However, many live at their work sites, thus helping the employers (work hours increase for them) and save costs for the workers too. Moreover, rents are not paid for temporary lodging at the site, food is usually free for the employees as with local work tradition—employers share food with the employees—and clothing costs very little. As labour is reallocated from agriculture to other sectors, farm output does not fall—labourers were already surplus or were underpaid. The relocation from agriculture to the tourism sector (given disguised employment on farms) thus has a very low or zero opportunity cost of foregone food output.

The wages of unskilled workers in businesses ranged from $35 to $45 per month, while in the current exchange rate US dollar appreciated a lot so wages are higher in Pak rupees. The model assumes average earnings of $40 per month in tourism businesses, which includes expenses, such as transport or other living costs. The lifestyle associated with working in the tourism sector may be more desirable than living in the village. However, Lim and Saw (2006) observe that in determining inter–sectoral labour allocation the preferred criterion for workers is the net financial remuneration. The data validates that the skill and educational level of workers in low paid jobs in the two sectors are almost similar. Thus, movement from agriculture to tourism tends towards low–skilled, labour–intensive work. The next section discusses the model's key assumptions.

Model Assumptions

The agricultural price is initially valued at $450/tonne from a production of 2.1 tonnes per acre, consistent with our field survey of prices. Each worker's initial production is 0.7 tonnes/worker/year which gives a low annualised output in the post–conflict period. The average cost of agricultural production is at least 40 percent ($180/tonne), as estimated from the survey data.

Simulations start with the assumption that 625 tourism related businesses are employing around 33 percent or 3300 workers. Agriculture is employing about 6700 workers initially. The growth rate of food production is dependent on multiple exogenous and endogenous factors. Improved infrastructure is one of the exogenous factors, as is the intrinsic growth rate of agricultural output. The intrin-

sic growth rate of agriculture will result from more inputs, and resultant possible increases in natural capital i.e., land quality and production (per worker). The outcome is increase in profits, and these factors link financial and physical capital with the overall growth in agriculture. In the simulations the positive shocks will also involve the role of increased human capital, e.g., including better management practices and the role of improved and timely inputs. Infrastructural improvements involve improved irrigation systems and facilities such as better transportation and parking spaces, all –weather sheds for temporary storage of products at the local markets.

Following Conrad (1992) and Lim and Saw (2006), the model assumes that food output per worker grows logistically. Tourism businesses also grow logistically—new businesses will enter alongside the revival of the existing ones. However, both sectors will have a maximum limit of expansion. The potential annual agriculture output per worker is set at 1.5 tonnes/year, slightly more than double the initial output, the maximum number of sustainable businesses is initially set at 1250.

Growth in the number of tourism businesses drives up wages in related sectors. The monthly tourism wage can vary, starting with $40/month and rising slightly if labour demand rises with growth in the total number of tourism businesses. The net expected tourism wage is the actual wage less costs or expenses borne by workers in the sector, adjusted by the probability of getting a job in the sector. However, it is possible that employers hire people from outside the district. In practice, labour movements can take place from outside the region, but growth will still have a slight upward pressure on wages.

If agricultural output rises due to infrastructural development, agricultural prices fall, assuming there is no big upsurge in demand. This leads to changes in profits per agricultural worker (i.e., farmer). Agriculture profits per worker per month are calculated as output (tonnes) per worker per year, divided by 12 months, all multiplied by the price of agricultural output/tonne, less the cost/tonne for production (for inputs). This follows Lim and Saw (2016). Production costs for orchards include fertilizers including micronutrients, pesticides, ploughing or herbicides, pruning and irrigation, less the assumed production benefits accruing from infrastructural development. The positive impacts of benefits resulting from infrastructure services are part of the growth equations for agriculture and tourism businesses. It is to be noted that as income increases, the increased financial capital enables farmers to spend more on inputs and productive physical capital, for further income increase.

The relative net returns for workers determine the inter–sectoral labour allocation. These follow the worker's decision about whether to work more in agriculture (N_A) or in tourism (N_T). The allocations are based on the following equations :

$$N_A = \frac{N}{2}(1+d), \; N_T = \frac{N}{2}(1-d), \text{ and } N = N_A + N_T \tag{1}$$

where N is the total labour force of 10,000 workers in the simulated unit, and N_A and N_T refer to employment in agriculture and tourism, respectively. The term d refers to the ratio of profit difference per worker among the two sectors. For this model d is calculated as : $d = (\pi_A - W^T)/\pi$, where W^T is the expected monthly wage in tourism and π equals $\pi_A + W^T$. The numbers employed

in both sectors depend upon the ratio of profit difference (d) in wages between the two sectors, given that total employment remains unchanged. It is assumed that if $d = 0$, labour is distributed evenly across agriculture and tourism. However, the ratio of profit difference between two sectors (d) is not equal to zero as found in the data and through observation in Swat. Changes in profits occur due to increased food production and workers reallocate their labour across the sectors. This will have impacts on employment levels and on sectoral growth rates. In the case of agricultural growth rate, for example, a shift of workers from agriculture to tourism businesses is to have a relatively small impact on production.

Scenario 1 : The baseline model

The key simulation equations for Scenario 1 are given below.

Agriculture Sector

Growth rate of agricultural output : $\dot{A} = (r_A - r_A\, A/\overline{A} + 0.25 \times AI + 0.003 \times AE) \times A$

Production/worker/year : $F = \int \dot{F} dt$

Potential output/worker/year : $\overline{F} = 1.5$

Intrinsic growth rate : $r_F = 0.0001$

Price/tonne $P_F = 456$

Cost/tonne $C_F = 68$

Profit/worker/month : $\pi_F = $ Production/worker/year/12 * ($P_F - C_F$)

Initial agricultural output/worker 0.83 tonne/worker

Tourism Sector

Number of Hotels : $H = \int \dot{H} dt$

Potential number of hotels $\overline{H} = 400$

Intrinsic growth rate : $r_H = 0.2$

Monthly wage : $W = 55 + 0.02H$

Net expected wage : $W^E = (W_T - C_T)\, 0.00055\ T$

Ratio of inter–sectoral profit difference : $(0.5\ \pi_F - W^T)\,/\pi$

Initial tourism business employment : $TE = 3300$

Tourism infrastructure services : $TI = 100$
  (Initial \$/month/person)

Employment (N)

Total employment : $N = N_A + N_T = 10{,}000$

Agriculture : $N_A = \dfrac{N}{2}(1 + d)$

Tourism : $N_T = \dfrac{N}{2}(1 - d)$

Ratio of profit difference per worker $\quad\quad\quad d = (\pi_A - W^T)/\pi$

Total profit/worker $\quad\quad\quad\quad\quad\quad\quad\quad \pi = \pi_A + W^E$

Initial Conditions

Agriculture production (tonne/worker/year) : 0.7

Number of hotels : 625

Results and Discussion : Why Join the Militants?

The modelling seeks to dynamically characterise the behaviour patterns of parameters representing annual agricultural production, profits per worker and resulting labour movements across the two sectors in post–conflict Swat. This experiment selects infrastructure services as the potentially most relevant parameter to shock the regional economy. The baseline simulation assumes an amount of US $100/month of infrastructural services per person, which independently influences the growth of agriculture and tourism businesses.

Food output, from an initial 0.7 tonne/worker/year, increases substantially to 1.05 tonne/worker/year which represents about 34 percent growth in the simulated time. The results conform to the findings during interview responses and field discussions, of agriculture growth averaging above 6 percent per year in the pre–conflict period in Swat. Tourism businesses also grow substantially. From the initial number of 625 tourism businesses, there is an increase to 865 businesses in the simulated period, a 28 percent increase in the period—about 5.5 percent annually.

Labour allocations take place depending upon profits per worker, when simulated for business and agricultural employment. Some labour shifts from agriculture to tourism businesses. One crucial aspect is how the rise in production affects prices. Prices over the five–year simulation period with increased production decrease by more than 12 percent per tonne.

Why Join?

There are various incentives to become a militant. To gain support, the Taliban militants highlighted religious sentiments, like declaring their movement in Swat and in neighbouring Afghanistan to be a *jihad* between infidels and Islam. Moreover, the militants made social and economic promises such as delivering quick justice, driving out the big landlords or Khans, and making equitable distribution of land to the landless (Khattak, 2010). Institutions of dispute resolution were set in Swat—much alike the model of sharia or Islamic courts in Mogadishu, Somalia, and the law courts in neighbouring Afghanistan—administered by the Taliban. The lethargic public judicial system in place provides the space to offer an alternative speedy justice system during lawlessness and chaos (Hansen, 2007 ; Keen, 2012).

Teenage boys and young men were recruited to roles ranging from scouts, roadside bomb planters to suicide bombers due to multiple push factors. Many joined because the attached power of guns, money and respect allowed them to settle personal scores with their opponents—mostly influential people (Khattak, 2010). The Taliban also used coercion in recruitment : parents in remote villages

were ordered to send one male member to join the militia. Those who refused to comply were threatened with eviction (Meo, 2009). Coercion can take on different connotations, it includes all types of involuntary enlistment—these can be various actions, social and psychological. It is the manipulation of the individuals to take actions that they otherwise would not (Eck, 2014). Further, the media reported in 2009 that the Taliban started forcing schoolchildren to sign as fighters, informants, or suicide bombers. Recruiting younger population is not uncommon recruitment strategy : younger people are easier to intimidate, indoctrinate and misinform than adults (Beber & Blattman, 2013). The Taliban leadership denies such reports, and insists their battle is for faith, not for material ends (Siddique, 2010).

Genuinely rooted grievances about economic hardship and inequalities in the past are not easily forgotten (Sen, 2008). Such a situation applied in Swat, where economic and social exclusion for the marginalised was significant, spanning long periods of time. In addition, abuse and unfair treatment from the counterinsurgent forces during the civil war incited support for the militants and increased recruitment.

On one side militants destroyed economic activities and infrastructure. On the other the army—during its counterinsurgent operations—depended heavily on aerial power and artillery fire that led to extensive infrastructural damage and civilian casualties. The resulting increase in vulnerability, infrastructural destruction that restricted movement, and limited opportunities in formal sectors, emerged as prominent economic incentives for recruitment—before and during the civil war. People supported and joined the militants. The Taliban told them that their lives were worse and they could make it better. Owen Bennet–Jones, in a remarkable documentary for BBC television, which released in 2010, visited Swat and interviewed some Taliban fighters in Mardan city prison. He concludes that poverty, injustice, and inadequate infrastructure were the main reasons which led some Pakistanis to think that the Taliban could do better for them. A Taliban recruit explained to Bennet–Jones that by getting land from the Taliban his family could have sold the land and got the money. These remarks emphasise that the dispossessed joined the Taliban as they offered escape from generations–old poverty traps.

The alternative but significant question of ideological radicalisation as a motivation for recruitment is complex to answer. For example, the leadership of the Taliban (shura) and the commanders may have different reasons to be permanent members of the militia. Threats to their lives and the chance of being captured by security forces are consistently part of their anti–state activism. With these risks, the motivation of income alone may not be a sufficient explanation. The Taliban sometimes release video recordings of suicide bombers' departing messages before suicide attacks. Meo (2009) reports one such video in which a teenage boy says, 'some hypocrites (a reference to government claims that families of suicide bombers are paid after attacks) say that we are doing this for money …. but we are told by Allah to target these pagans.' While for suicide attackers, ideological motives maybe supreme, for rank–and–file recruits or foot soldiers, the push factors in recruitment may not solely be ideological, as discussed earlier. Qazi (2011) notes that young recruits, including many suicide bombers, are usually poor, uneducated, or seminary students. Earlier, Sen (2006) comments, 'Poverty and economic inequality may not instantly breed terrorism or influence

the leaders of terrorist organizations, but nevertheless they can help to create rich recruiting grounds for the foot soldiers of the terrorist camps.'

It is hard to quantitatively analyse the various subjective push factors to enlist as militants, which include revenge in local settings, the military's maltreatment of many, the level of ideological consensus, fear of repercussions for refusal to join, and even a sense of adventure. From the above discussion and because rank and file fighters and others in the organisational structure of the Taliban receive salaries and other economic benefits. Although salaries varied in the range US$25 – US$125 per month, depending on the nature of tasks after recruitment (Afsar, 2008 ; personal communications, 2010–2011 ; Qazi, 2010 ; Rodriguez, 2012). The push factors for recruitment particularly include inequality and dismal opportunities in the economic and social system (particularly land holdings), very low prevalence of secondary or higher education, and involvement either in underpaid employment or the absolute unavailability of employment for the educated. All or some of these reasons worsened in the post–conflict damaged economy. Such a situation demands implementation of a coherent developmental plan, which supplements growth and employment in major economic sectors.

Our key point relates to geography. It was the upper, mostly rural mountainous areas of Swat, which the Taliban initially occupied and undertook recruitment in, and from which they later spread to other parts of the district. The most severe episodes of casualties and damage to houses, agricultural land and destruction of orchards during the civil war took place in upper Swat. Taliban occupation and the subsequent civil war resulted in up to 90 percent displacement of households in many areas, providing a fertile breeding ground for militant recruitment. Indeed, most recruitment was from the countryside. The Taliban's initial promise was to distribute land among the landless, a tactic that attracted many recruits.

The next modelling section will see the impacts of various shocks to the regional economy, and aims to find potential solutions for the revival of livelihoods in Swat. Livelihood revival links with the subsequent decrease of income–based push factors for joining militant organisations.

The exogenous assumption held for modelling the following scenarios is that funding is available and an efficient implementation mechanism is in place, to achieve development goals for the revival of sustainable livelihoods in post–war Swat. A prioritised focus is required from both the government and major international donors. The underlying assumption is that the revival of conflict–affected livelihoods is crucial in reducing the chances of another outbreak of militancy in the region. This revival occurred but not extensively—most of it with individual and household struggle—and currently the active presence of militants is widely reported. However, the wide–ranging mass support they got earlier is absent now.

Individual Infrastructural Services Shocks

In the modelling next, the amounts spent on agricultural and tourism business infrastructure services per person/month were separately increased to see the effect on the similar variables, as in the baseline model. Initially only agricultural infrastructure services were increased, from US $100 to $140 per person per month (a 40 percent increase). The tourism business infrastructure retains the

same dollar value as in the baseline model. This percentage increase is very close to the total annual development budget of Swat district from 2011–12 to 2013–14 for agriculture, which amounts to approximately a 35 percent increase for agriculture alone. If expenditure on public health engineering is included, the increase is about 64 percent over the previous year. In this model, agricultural employment increases and tourism business employment falls more than six percent, compared to baseline model. The outcome from this shock is that tourism related businesses and expected wages in these, remain unchanged when compared with the baseline model. Regarding outcomes in the agricultural sector, agriculture profits/month/worker increase by nine percent, and annual agricultural output increases by nine percent, by the end of the simulation period. This increase in agricultural production is less than the decline from the pre–war period. That was also found during field discussions, for very good farms producing apples, walnuts, plums and peaches, production losses ranged from 20 to 50 percent—and sometimes even more—in the post–war era. However, in reality not all farms have the same level of production, so the estimated increase in the simulation outcome is quite realistic and represents an average increase.

In an alternative modelling shock, the level of infrastructure services was increased by 40%, but only for tourism businesses such as sports festivals, better maintenance of tourist resorts and improvements in local cultural heritage (both ancient and modern). The input for agriculture remained the same as in the baseline model. The results indicate that employment increases by about eight percent in tourism businesses, whereas for agriculture it decreases by more than four percent. The overall growth in businesses indicates that their number increases by 12 percent, and wages increase by 13 percent over five years. This resembles the earlier shock to agriculture alone, where growth in the other sector (businesses) remains similar—likewise agricultural profits and output in the second experiment show an almost similar outcome as in the baseline model.

Overall results from the above separate shocks indicate positive changes only in the sector where the shocks are applied. These changes do not seem abrupt : for example, changes in employment, output, and number of businesses have growth percentages very similar to those found during field discussions about the local tourism–based economy. The likely revival of both pre–war dynamic sectors is the objective in the simulation modelling. We look next at viability of livelihood improvements where both sectors undergo simultaneous positive shocks in the modelled hypothetical economy of Swat.

Scenario 3 – Combined Infrastructural Shocks

In scenario 3, the investment in agriculture–related infrastructure is increased by 20 percent ($100 to $120 per person per month) and in tourism–related infrastructure by 40 percent ($100 to $140). These combined positive infrastructural services shocks are applied to investigate the growth–orientated supporting factors between these vital sectors of Swat's economy. For example, improved roads and transport networks, and better public facilities attract more tourists, and facilitate both sectors with increased demand. Alternatively, the infrastructure services specific to agriculture include improvements in irrigation, and in services and training, which improve farm management. Figures 2 to 7 below present the comparative results from this positive shock over the five–year pe-

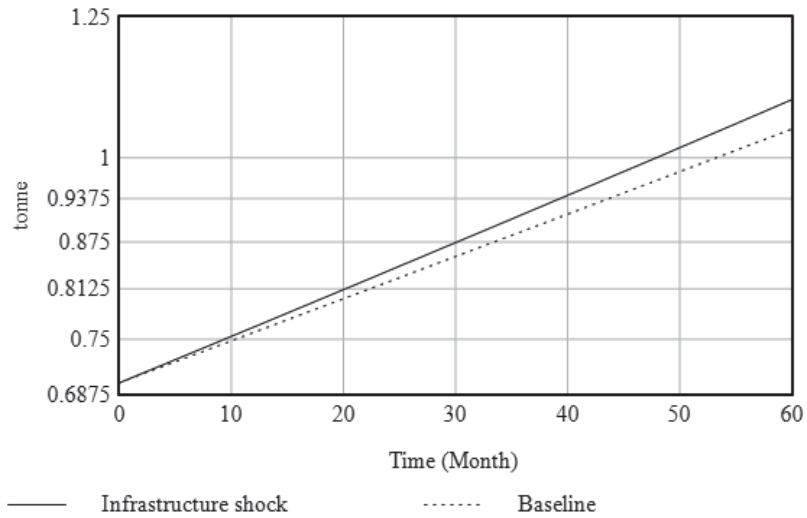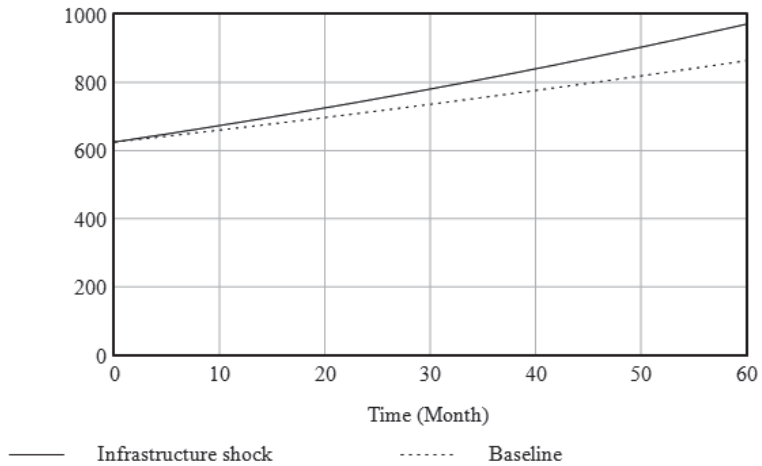**Figure 2. Annual agricultural output per worker**

annual agri output per worker

Infrastructure shock .... Baseline

Figure 3. Number of tourism businesses

tourism businesses

Infrastructure shock .... Baseline

riod. The results complement the background expectation for this combined shock. Sustainable livelihoods associated with both sectors significantly improve over time. The results indicate that agricultural output/worker and number of tourism businesses grow simultaneously (Figures 1 and 2). Profit per worker also increases in both sectors, with a higher percentage increase in tourism businesses. In alignment with the theoretical assumption, higher profits in tourism attract more workers, and these increase by about three percent at the end of the simulation period (Figure 6). Labour movements from agriculture to more profit–orientated tourism sector businesses are in agreement

Figure 4. Agricultural profits per worker
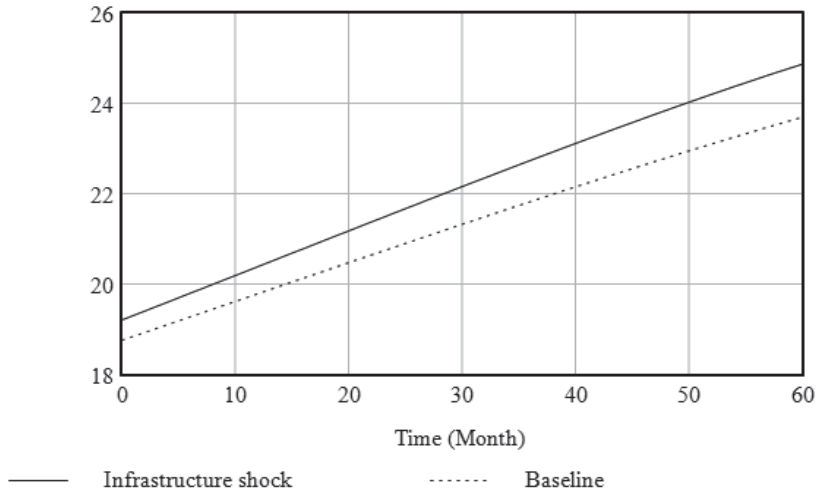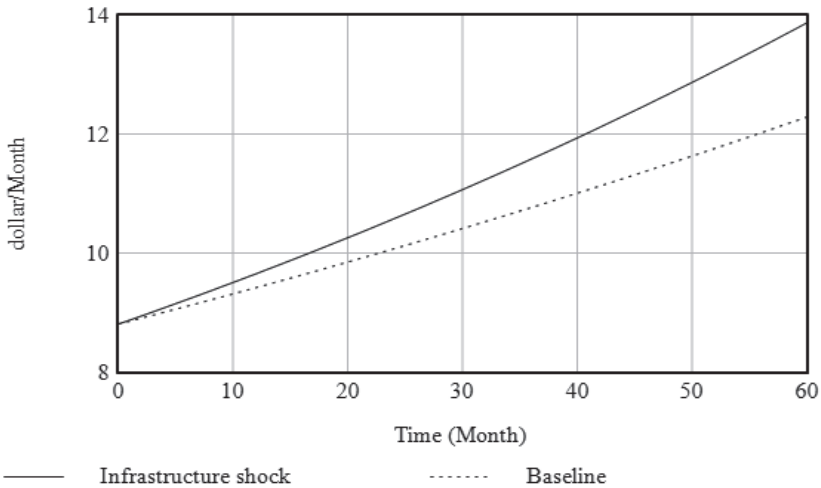

"monthly agri profits/worker"

——— Infrastructure shock   ······· Baseline

Figure 5. Expected tourism sector wage

net expected tourism wage

——— Infrastructure shock   ······· Baseline

with the survey data findings.

Our model shows reduction in agricultural employment and a shift towards more employment in business sectors. As a corollary we expect a decline in recruitment in militant organizations, with the allure of earning an income in tourism reducing the economic push factors for joining the militancy. The model prediction conforms well to events that have played out on the ground more recently, with incidents of militant conflict declining. The simulation modelling concludes that with a broad range of infrastructural improvements, livelihoods can improve once again. Labour positively

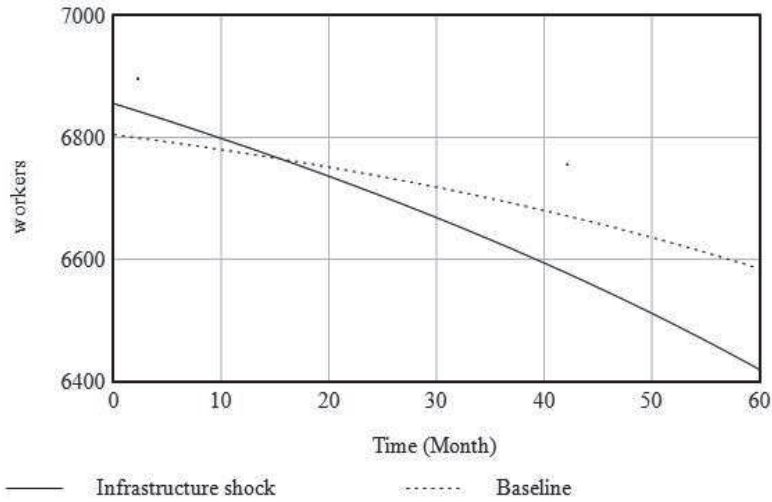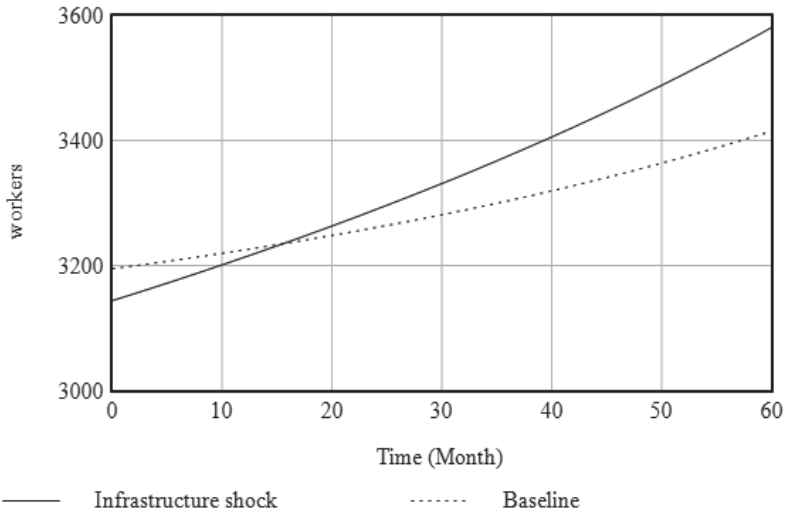## Figure 6. Change in agricultural employment

agriculture employment

Legend: —— Infrastructure shock ·········· Baseline

Figure 7. Change in urban businesses employment

business employment

Legend: —— Infrastructure shock ·········· Baseline

shifts to profit–orientated formal sectors, breaking the constraint of working for low pay (a strong incentive to join the militants). Incomes in both agriculture and tourism rise. Militants, as mentioned earlier were getting salaries ranging from US $25 to $150 per month depending on the nature of their work and their experience. Their usual work includes facilitators—which provide help in certain operations—horizontal and vertical information carriers, bomb makers, road side bomb planters, combat fighters, intelligence collection (who develops trust among the leadership). Never-

theless, one Taliban cell in a village may differ in salary offers for various tasks from those in other areas. It is safe to envisage that an income comparable with the minimum recruit salary creates more incentives for participating in formal and safe wage work, especially in tourism.

Note that even though agricultural and tourism wages both increases, at the margin relative wages shift in favour of tourism compared with the initial baseline. The expected tourism wage rises by approximately 55% over the simulation period, from $9/month to almost $14/month (Figure 4) : agricultural profits over the same period rise (just over 30%). This is what leads to agricultural employment falling, as labour migrates from the rural sector to the cities where tourism is located, away from the influence of militants. The key insight is that if tourism wages do not rise enough, then the rural out–migration falls. Therefore, policies to support tourism employment and strong tourism wage growth are vital in the struggle against militancy.

Conclusions

Livelihoods once shattered are hard to rebuild : this involves substituting capabilities and increasing the asset base of households. This may be difficult—at least in the short to medium term—in view of the loss of assets and limited post–war opportunities. Recovery requires structural interventions, which may assist people in asset enhancement and early livelihood recoveries, at least enabling them to pursue their pre–conflict livelihoods. This article addresses these issues in a needs–specific context, and presents quantitative estimations of livelihood revival outcomes in Swat district. It is based on a livelihood enhancement framework, to show the decreased chances of recruitment of foot soldiers to the militants—the Taliban. As tourism expands and labour moves out of the rural, agricultural sector, which we identified as the catchment area of militant recruitment.

If the reasons for joining militants lie in ideology, revenge or similar motives, then these are complex. Sen (2008) considers they require a complete paradigm shift on behalf of the state to focus on issues which are of economic concern to the people (poverty and inequality). He terms this shift in focus 'the role of conscious politics' which can act as a barrier to violence related to ethnicity and religion. If adverse economic conditions are what drive people to join the militants, then different solutions may be required. Thus, our method in this paper has been two–pronged, addressing infrastructural development directly and highlighting approaches such as alternative job creation—particularly in the urban economy.

It may be argued that if the pre–conflict economy was functioning well, then why did the Taliban occupy the district and succeed in getting local recruits? The question is significant and likely explanations include and offered. First was their militant power, which created an environment in which only the Taliban could flourish. In addition, the economic, judicial and social systems in Swat were slow–acting and lacking in competence. Significant inequality prevails in landholdings. Nevertheless, the locals were unaware of the revengeful and rigid governance style which was to be imposed in Swat. Now, as presence and militant actions are again being reported—there is resurgence—but these totally lack support rather are fervently being opposed by locals.

Communities can still be hit by other external shocks, as experienced by the people of Swat in the

form of severe rains and floods in 2010 (or Covid–19 today). The prospect of natural disasters strengthens our case for infrastructural development and for creating off–farm employment opportunities. Without urban–based jobs, losses in farm output may lead to more vulnerability and increase the likelihood of household members considering joining militias. Moreover, improving the local landscape with increases in the number of farms also expands tourism businesses. A close connection then emerges in which tourism and agriculture can rise alongside each other. Such an outcome seems realistic following the model assumption that relative peace is maintained (safety for reconstruction projects), such that the two sectors can support one another.

By understanding the dynamics of the improvements in various infrastructural services, villagers will be in a better position to evaluate the worth of infrastructure projects and related services. Some of these may come at the expense of providing short–term individual household assistance, which remains the preference and in practice during re–settlement programmes in Swat. If complaints arise, the current democratic environment is conducive to accommodating and listening to people's grievances. As agriculture and tourism incomes increase overall, the financial returns to other service providers such as health and education and the provision of more physical infrastructure will increase.

Data : Bhatti, Haseeb (2022), "Data– Swat Households", Mendeley Data, V1, doi : 10.17632/v87tdngr8t.1

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