

ALTERNATIVE DEVELOPMENT: THE MODERN THRUST OF SUPPLY SIDE POLICY¹

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Abstract

Alternative development is closely associated with reductions in drug crop cultivation at the local level. However, currently these local successes cannot be directly attributed to alternative development interventions because the motivations and circumstances that determine household drug crop cultivation remain largely unexplored. Research has tended to focus on aggregate trends in drug crop cultivation at the national, regional and village level. The specific socio-economic, cultural and environmental circumstances that influence household production are consequently overlooked in project design. Rather, alternative development initiatives have adopted a uniform approach where emphasis is placed on the high economic returns that opium and coca are reported to accrue per unit of land.

This paper rejects this uni-causal explanation of drug crop cultivation that finds its basis in the assumption that drug crop producers are a homogenous group. It offers an insight into the diversity of factors that influence household drug crop cultivation that are currently neglected, including returns on labour, access to credit and land, and the effect of law enforcement and conditionality. It indicates that the failure to recognise the dynamics of household decision making has implications for the cost effectiveness of the current strategy and raises questions as to the unintended consequences of alternative development, particularly with regard to its impact on the poor and the process of relocation. It also illustrates that greater attention needs to be given to the timing and interface between law enforcement initiatives and alternative development interventions.

The paper concludes that a greater understanding of the multi-functional role that drug crops play in the socio-economy of the household would assist in determining more effective and sustainable initiatives aimed at reducing both existing, and potential drug crop cultivation. It also suggests that the overall success of supply side interventions will be contingent on reductions in demand both internationally and increasingly in source countries.

OPIUM AND COCA: THEIR CULTIVATION AND CHARACTERISTICS

Opium and coca represent efficient cash crops well suited to the harsh local conditions of source areas. Opium will grow with little difficulty in conditions unsuitable for most other crops, cultivated on either irrigated or unirrigated land and at altitudes of up to 3000 metres. Households are also able to take advantage of the variety of climates available to them in the mountainous areas of opium

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cultivation. Consequently planting dates and the altitude of cultivation is varied as a response to changing weather conditions, reducing risk² and accruing higher yields.

Coca also shows resilience in a marginal environment. It is able to grow in a variety of altitudinal, climatic and soil conditions. It shows a resistance to pests and diseases and is tolerant of acidic soils, consequently the use of pesticides and fertilisers is limited, making it a popular crop in the economically and environmentally fragile areas of the Andes.³ It is a perennial that matures in only eighteen months and can be harvested 4 to 6 times per annum for up to forty years, although productivity does begin to dwindle after fifteen. The labour intensive nature of harvesting means that coca not only provides a livelihood for the producer but has given those on the altiplano a consistent source of employment [3].

Both opium and coca are low capital input/high yield crops that produce non perishable, high value to weight products. The durability of opium means households can choose to speculate if market prices are deemed too low. Opium also produces a number of by-products with both a high use and exchange value. With many areas of cultivation lacking adequate infrastructure the high value for weight ratio of coca and opium makes the transportation of relatively small amounts by either mule or foot a profitable endeavour. Most importantly they have almost guaranteed markets and access to credit and seeds from some traders.

Were it not for the undesirability of the end product, opium cultivation would be considered the ideal solution to the agricultural problems of Badakhshan, and aid agencies would no doubt be heavily promoting its cultivation and introducing improved methods of production [4].

Measures of opium and coca cultivation inform policy makers of resource priorities and the effectiveness of current supply side strategies [5]. However, reliable estimates of illicit drug production have been difficult to obtain due to the political and geographic inaccessibility of source areas. Inadequate data on the level of opium and coca cultivation, yields, alkaloid content, harvesting efficiency and conversion factors has resulted in a wide disparity in the measurement of worldwide cocaine and heroin production. For instance, opium production figures derived by UNDCP's Annual Opium Poppy Survey for Afghanistan have consistently differed from those produced by the United States Government estimates, sometimes by as much as 100%.

Yet it is important to recognise that, even with consensus on the extent of drug crop cultivation in any given source country, there is a need to develop a greater understanding of the complexity of implementing alternative development interventions in source areas, and what these interventions can realistically hope to achieve given the growing demand for illicit drugs and the continuing prevalence of rural underdevelopment.

²Cultivating opium is not without risk, aside from the threat of eradication by law enforcement agencies, opium poppy is vulnerable to a limited number of natural threats during the first two months of growth, including inadequate sunshine, excessive rainfall, insects, worms, hailstorms, early frost and trampling by animals. During the harvest, rain and high winds will reduce yields. The harvesting of opium poppy also requires skill and experience and it is thought that a significant proportion of the potential yield can be lost due to untimely, or improper, lancing [1]. The outbreak of *fusarium oxysporum* in the Upper Huallaga valley, Peru has illustrated that coca production is not without risk from natural agents. Moreover, coca requires three days to dry after being harvested. In the tropical zones of the Andes, where coca is generally grown, excessive rainfall is typical. The timing of the harvest is critical if the leaves are not to blacken and be wasted [2].

³Coca's ecological range is not limited to South America, during the turn of the century it was cultivated on the island of Java, Indonesia.

ALTERNATIVE DEVELOPMENT

The Concept

Alternative Development has sought to create the economic and social environment in which households can attain an acceptable standard of living without the need for drug crop cultivation. The approach has varied greatly between regions and donors. One of the main protagonists of alternative development has been the Bolivian Government who has sought to capitalise on the image of drug crop cultivation as a source of 'development' in order to negotiate greater overseas assistance [6]. The semantics of 'alternative development' has also proven popular with some donors who have justified the contravention of conventional development criteria and best practice under the guise of alternative development initiatives.⁴

The concept of alternative development emerged from the failure of the crop substitution initiatives of the 1970s and the integrated rural development approach of the 1980s. During the 1970s crop substitution projects successfully identified alternative crops but failed to alter the market and infrastructural constraints that households faced in traditional areas of drug crop cultivation. The broader integrated rural development approach of the 1980s sought to redress this emphasis on replacing income and promote the integration of traditional areas of cultivation into the economic and social mainstream. It consolidated crop substitution initiatives with food for work schemes; income generation opportunities; social development initiatives aimed at improving education, health and access to potable water and sanitation; and infrastructural projects to improve access to markets.

However, the relocation of drug crop production from traditional areas to new areas of cultivation in the late 1980s prompted a further reappraisal of drug control, resulting in the broader strategy of 'alternative development' that has sought to integrate regional development assistance with law enforcement initiatives [6,9,10]. At the core of alternative development is a recognition that drug crop cultivation is interwoven with numerous other issues which go well beyond the micro-economics and agronomy of coca and opium cultivation.⁵

More recently a wide range of initiatives have been adopted in an attempt to integrate drug control into national development plans [11]. This broader strategy has sought to revive and expand the legal sectors of the economy and provide a framework for 'sound economic policies to generate demand for diversified economic growth and job creation nationwide' [12]. Indeed, in 1991 United States Agency for International Development (USAID) allocated a significant proportion of project resources to the highland valleys in Bolivia, in an attempt to generate alternative sources of income

⁴See Mansfield and Sage who argue that alternative development initiatives, particularly those implemented by the USG, often do not comply with conventional development criteria and best practice, largely ignoring cross-cutting issues such as poverty targeting, participation, gender, and environmental sustainability [7,8]

⁵At the international level only two alternative development projects have been attempted in areas of cannabis cultivation. In Lebanon's Bekaa Valley, which also produces opium poppy, and the Rif region in Morocco.

and employment and deter migration to the Chapare,⁶ as well as significant cash aid in the form of Economic Support Funds (ESF) to assist the GOB in its programme of economic reform.⁷

Some analysts have suggested that there is a fundamental contradiction between micro level initiatives that aim to integrate source areas into the nation-state through crop substitution, law enforcement and infrastructural efforts, and macro economic policies that seek to create 'sound economic policies' through reducing government expenditure and removing market imperfections [13]. It would certainly seem counter intuitive to suggest that the removal of agricultural subsidies and the imposition of severe budget constraints under the auspices of the Structural Adjustment Policies of the International Monetary Fund and World Bank, will have assisted governments of source nations in their efforts to increase agricultural incomes and improve the socio-economic, political and legal environment in which licit income earning opportunities might flourish. In response to this criticism the USG and European Union have offered trade preferences, debt relief and financial assistance to source countries in an attempt to create diversified and sustainable economies with viable alternatives to drug crop cultivation and processing. Under the current lexicon of the USG all these initiatives qualify as 'alternative development' interventions.

The Context

In practice alternative development initiatives have worked on the assumption that reductions in opium and coca cultivation are conditional upon the general social and economic development of source areas and their integration into the nation state [14,15,16,17]. As such the elimination of drug crop cultivation is often a positive externality of the process of enhancing food security, increasing household incomes and an improvement in the quality of life [16].

Indeed, evidence suggests that coca and opium production are a function of marginal socio-economic and ecological conditions [18, 19, 20, 21, 22, 23]. Hurd and Mastys's study of Nangarhar, Afghanistan indicated that opium production tended to concentrate in the poorest areas. The size of landholding, access to irrigation and population density were all seen as important determinants in the degree of opium cultivation. Potulski's research supports this claim suggesting that source areas in South and South East Asia as well as Latin America, typically suffer from a lack of land, reliable water supply, and food, making them some of the most agriculturally underdeveloped areas of the world [19,24].

Project base line studies also indicate that source areas are characteristically poor. In both Buner and the Eastern Dir valley, Pakistan, average per capita income was half the national average prior to project implementation [25,26,27,28]. Infrastructure, access to potable water and government health and social service provision are often limited or non-existent. Indicators of malnutrition, infant mortality and illiteracy have proved to be consistently and substantially higher than national averages [16, 29, 30, 31]. In Dir, Pakistan only 25% of men and only 2% of women were considered literate. Infant and child mortality is thought to range from 50% to 75% in Xieng Khouang, Laos [15, 17].

⁶One third of the CORDEP budget of \$38 million was spent between on the highland valleys between 1983 and 1992 [10].

⁷Despite the assertion that ESF were to assist the GOB in its programme of economic reform, payments were closely tied to the achievement of eradication targets. Consequently, some commentators suggested that these funds were used to finance the compensation payments given to those coca farmers who agreed to eradicate their coca [2].

Typically, over 90% of households in source areas have been found to be entirely dependent on agriculture as a source of livelihood, few off farm income opportunities exist [29]. However, the farming sector has proven structurally weak, with poor marketing, small landholdings, an absence of credit facilities, and a lack of irrigation. Environmental degradation, low quality inputs and poor agronomic practices have led to extremely low yields, resulting in food deficits of between 2 and 7 months [4, 16, 23, 29, 32, 33, 34, 35]. This loss of direct entitlement has led to a greater reliance on opium and coca as a means of securing subsistence [32, 36, 37]. For many households in source areas drug crops generate the greatest proportion of household annual income, a significant proportion of which is used to purchase food for consumption [19, 38, 39, 40].

Most inhabitants are destitute farmers who practise shifting cultivation and rely on poppy growing as a means of supplementing their meagre incomes to cope with chronic food deficit in food production.....There is no evidence that farmers, even with their returns from poppy are earning more than basic subsistence incomes.....and [they] are trapped permanently in debt [41].

Despite the rhetoric there is little evidence that this so called 'lucrative trade' has led to economic and social development in source areas. Within this context drug crop cultivation can be seen as part of a wider survival strategy aimed at guaranteeing food security. As such, a minimum level of coca and opium is integral to the livelihood strategies of poor households allowing them a guaranteed level of cash income to satisfy basic needs [21, 40]. Consequently, many commentators have suggested development assistance is justified for these areas simply on the basis of the prevailing level of poverty and the incidence of food insecurity [23].

The Results

Alternative development via the introduction of substitute crops and diversified cropping patterns has disproved the myth that coca and opium offer the highest returns to small farmers [19, 24, 39, 42, 43]. Substitution efforts in Northern Thailand have illustrated that annual profits per square metre can be increased by over 50 times by replacing opium with flowers [42]. In the Chapare rubber has been found to accrue four times that of coca per hectare [39]. In Buner, Pakistan household incomes were more than doubled through development efforts between 1976 and 1991 whilst opium cultivation had been all but eliminated since 1983 [39]. Moreover, Thailand's success in reducing the level of opium production has proved what development efforts can achieve where decades of coercion have failed [44]. Current levels of production are half that produced in 1984 and only a quarter of that produced in the mid 1960's.⁸ Consequently, Thailand's programme is considered as one of the most effective in the world [47].

The success of Thailand's programme of alternative development has been attributed to the broad development framework in which it operates. This approach has encapsulated a wide array of efforts aimed at enhancing food security; promoting alternative sources of income; and increasing government services in the highland areas. It has been supported by initiatives aimed at involving target communities in identifying community problems and priorities and in planning and implementing development interventions [38].

⁸A number of commentators have suggested that the level of opium cultivation in Thailand in the 1970s is questionable, claiming that figures were inflated as a means to attain more financial assistance [45]. As such, although the level of opium cultivation has undoubtedly fallen there is some uncertainty as to whether it has fallen quite so dramatically as some might suggest [46].

Although law enforcement is said to have played a significant part in the reduction in opium cultivation in Thailand a pragmatic approach has been adopted. Eradication has generally only been undertaken at the point when alternative sources of income exist.⁹ As such eradication is viewed in terms of 'negotiated' law enforcement based on the provision of basic needs. 'This participatory and contractual approach to the population represents a major element to ensure viability and sustainability' [9]. The authorities have also distinguished between commercial cultivation and conceded to a level of households production commensurate with the level of local consumption [29, 47]. Recognising that even if opium was to be abandoned as a source of income there would be medical, social and cultural reasons for household cultivation to continue on a small scale [32]. Moreover, great emphasis has been placed on keeping law enforcement activities distinct from the development programme [38].

However, despite Thailand's achievements the success of alternative development has been mostly limited to reducing drug crop cultivation at a local level. Substantial and sustained reductions have not been achieved and in most source areas, production continues to outstrip eradication. Moreover, the long term nature of Thailand's initiatives and its relative prosperity raises serious questions over the specific role alternative development has played in this success. It remains to be seen whether this is a replicable model for countries such as Afghanistan and Laos where off farm income opportunities are currently extremely limited.

Consideration of the distribution of project benefits has revealed that relatively wealthy households have usually benefited disproportionately from project activities [15, 26, 48, 49, 50]. These households are located in more accessible regions and often tend to be less reliant on drug crop cultivation [16, 38, 51]. Although the poorest are recognised as an important focus group the general thrust of alternative development does not specify that they should be given priority. This tends to conflict with the assertion that drug crop cultivation is a function of the prevailing poverty that exists in source areas.¹⁰ It also raises questions as to the impact of these interventions on those poorer farmers whose livelihoods are reportedly most dependent on drug crop cultivation. This is particularly relevant in Buner and Gadoon Amazai, Pakistan which provide a ready source of itinerant poppy harvesters for Dir and where cultivation on a small scale persists ten years after the implementation of alternative development initiatives.¹¹ Moreover, evidence has suggested that reductions in coca cultivation in the Chapare, Bolivia have been accompanied by a deterioration in the general health and diet of the population resulting in an increase in the incidence and intensity of malnutrition [31].

⁹The Thai authorities have assumed a graduation process, based on their experience of annual reductions in opium poppy cultivation once remunerative substitute crops have been found. As such a minimum of three years is given for the transition to alternate crops after alternative net incomes are assured [29].

¹⁰Rather than define the intended beneficiaries of the project and focus on poorer families, poppy growers or those with specific irrigation problems, Phase I of the Dir Project adopted the role of comprehensive rehabilitation [15]. Some have argued that this lack of clarity combined with the vested political interests of the local hierarchy led to resource allocation favouring the more affluent farmer who tended to grow little poppy [26]. However, the realities of gaining access to Dir may have initially required a pragmatic approach that sought to address some of the concerns of the wealthy and powerful.

¹¹Moreover, there is little detail of the motivations of the persistent opium growers of Buner, Malakand and Swabi who continued to grow poppy ten years after the implementation of alternative development initiatives only to see their crops destroyed each year.

There is little detail regarding the impact of alternative development on the environment of source areas.¹² Permanent settlement, sedentary agriculture and improvements to land use, crop yields and soil conservation are on the whole regarded as beneficial. However, most of the alternative crops identified have required considerably larger growing areas resulting in an expansion in the area under annual plantation. More intensive farming systems have led to the use of chemical fertilisers and pesticides with long term consequences for soil fertility and the pollution of the watershed [50]. Road access has facilitated illegal lumbering and increased commercial interests such as tourism and agro-industry all with concomitant effects on the environment [52]. Relocation of production has led to further deforestation in inaccessible areas. However, the balance between positive and negative impacts has not been quantified.

Implementation through government agencies has proven to be important in ensuring the sustainability of alternative development interventions. However, the capacity of recipient communities to manage their own resources and implement initiatives is currently limited, even in Thailand after almost thirty years of assistance [50]. Although village institutions and more recently community level focus groups have been encouraged as a means for facilitating the participation of local communities, emphasis has generally been given to consultation and technical transfer rather than local capacity building [30, 38].¹³

In practice community development and 'participation' have often been treated as separate components with independent activities, rather than integral to the project process. The needs and priorities of recipients, and the disparate factors that influence household drug crop cultivation have not been adequately accounted for in project design. Labour and land constraints, access to credit and the role ecological degradation and law enforcement initiatives have played in household decision making have been largely ignored in favour of a uniform approach, where emphasis is placed on the high economic returns that opium and coca are reported to accrue per unit of land.

HOUSEHOLD DRUG CROP CULTIVATION

Population density, diminishing landholdings and environmental degradation

The correlation between the size of land holdings and the proportion of land dedicated to drug crops is evident. Where household access to land is acute both coca and opium have been found to be extensively grown [28]. In Swabi, Pakistan the greatest proportion of land dedicated to poppy was found to be where household land holdings were less than 0.75 of a hectare [43]. Similarly in Achin, Afghanistan where mean household land holdings are less than 0.5 hectare 65% of cultivated land is dedicated to poppy cultivation [20]. This contrasts greatly with Sukhurd, Afghanistan where the farmland is considered rich, crop yields are high and the population density low. Here only 10% of cultivated land was dedicated to poppy.

In the Chapare the amount of land dedicated to coca as a percentage of total farm area varied considerably. Although almost every household was found to grow a minimum amount it was those

¹²It is particularly telling that after thirty years of rural development interventions in the highlands of Thailand, where environmental protection has been one of the key objectives, it is currently unclear what impact alternative development has had on the environment [50].

¹³Moreland et al found that measures adopted in Northern Thailand to empower local communities to initiate and manage their own development were given little emphasis, despite lessons from previous experience [50].

with the least land who were found to cultivate the largest proportion of their land with coca [21]. The smallest land holdings of 2-3 hectares of tillable land were in the 'Zona Roja' where coca predominates [53]. Those households in excess of 5 hectares of perennial crops such as citrus, coffee, bananas or cocoa, rarely grew coca [54].

The relationship between land and drug crop cultivation has often been explained in terms of increasing population densities. Such increases are a common feature of source areas in South West and South East Asia¹⁴ and has prompted migration from the highlands of Bolivia¹⁵ and Peru to the coca producing regions of the Chapare¹⁶ and Upper Huallaga Valley. Restrictions on land use, immigration and increasing population pressure have all served to reduce the availability of land¹⁷ in these areas. The result has been a reduction in the size of landholdings and reduced fallow periods, leading to losses in soil fertility and diminishing yields [16, 56, 61, 62]. Both coca and opium can be grown on the same plot for up to 15 years, considerably longer than traditional agricultural alternatives satisfying the demanding requirements of households with limited access to land and modern inputs [15, 26, 32, 52, 60, 63, 64, 65, 66]. Within this context of increasing ecological degradation, drug crop cultivation can be seen as a survival strategy by which resource poor farmers have mitigated the impact that population pressure has placed on their already limited resources [67]

The common response of alternative development to this problem of diminishing land holdings has been to encourage off-farm income opportunities and intensify agricultural production. Initiatives aimed at increasing off farm income opportunities have included the encouragement of value added activities and the provision of vocational training to improve employment prospects elsewhere. Regardless of the merits and limitations of each approach the objective has been to increase the returns on labour.¹⁸

The intensification of agricultural production however has sought to increase both returns on land and labour. The introduction of higher yielding varieties of seed, irrigation, and improved agronomic practices have proved particularly successful in increasing the production of traditional crops and reducing food deficits in source areas.¹⁹ However, many of the improved agricultural practices suggested for alternative cash crops have increased the demand on labour [50]. Without a

¹⁴In Dir, Pakistan the density of population is particularly acute in Nihag, and Usheraï where the majority of the area's opium cultivation was undertaken [27, 55].

¹⁵In Campero and Mizque, Bolivia 92% of those interviewed were found to have less than 5 hectares of land [56].

¹⁶It is argued that migration from the highlands of Bolivia was driven by a process of economic stagnation and environmental degradation. Faced with diminishing agricultural yields, migration became the only means by which land constrained households on the altiplano could satisfy their basic needs. However, this process led to a chronic labour scarcity in the highlands, affecting the household's capacity to manage on-farm resources effectively. Consequently agricultural productivity declined further, intensifying the pressure to migrate [57].

¹⁷The influx of landless Northern Thai peasants and government restrictions on the use of forest land, has placed increasing pressure on land availability in Northern Thailand [58,59,60].

¹⁸Given limited local off-farm income opportunities some interventions sought to provide vocational training by which small land holders would be able to obtain employment elsewhere. However, it is unclear what the implications of this strategy are for the long term development of the area and the household division of labour. Locally based small enterprise initiatives would seem to have a greater impact on the development of the area as a whole and is a strategy that may be more attune with the values and aspirations of local communities. Moreover, an approach that is aimed at developing local off-farm income opportunities would have a greater opportunity of integrating the needs and priorities of women than one that seeks to train migratory labour.

¹⁹So much so that high yields and increasing prices have been significant enough for wheat to compete with poppy in real economic terms in Helmand and Uruzgan, Afghanistan, albeit during a time of falling opium prices.

thorough understanding of existing and potential labour resources and requirements, intensification may have increased agricultural yields of land whilst reducing the returns on labour. What this strategy has failed to acknowledge is that extensive cultivation of opium and coca cultivation on small holdings can be explained as much in terms of labour constraints as land scarcity.

Returns on land or labour?

Much of the discussion regarding the profitability of drug crops centres on returns on land, rather than labour. Yet it is not clear that land is the limiting factor for many drug crop producers.²⁰ Indeed, despite their suitability to the local environment experience has shown that opium and coca are rarely monocropped²¹.

In the Chapare very few households were found to grow in excess of 1.5 hectares of coca despite considerable variations in the size of land holdings. Of those who did eradicate their coca in the Upper Huallaga Valley, Peru, 76% of households were found to have less than 2 hectares regardless of their access to land [21]. Whilst in Turkey, where households had on average access to 5 hectares of cultivable land, a ceiling of 0.5 hectares of opium was grown [70]. Indeed, very few households have been found to dedicate more than 60% of their cultivable land to opium and coca implying that they are generally grown as part of a wider cropping pattern aimed at self sufficiency.²² This tends to counter the belief that drug crops are grown purely for their high returns to land [6, 20, 21, 71].

The labour requirements for both coca and opium are considerable in relation to other crops.²³ However, production techniques and the demand on labour vary substantially according to the intentions and resources of the household. When coca and opium prices are high, intensive cultivation is profitable resulting in greater use of hired labour and modern inputs if they can be obtained. Low prices will not necessarily manifest in reductions in drug crop cultivation. Simpler production methods may be employed making greater use of family labour. Indeed once coca is established unremunerated family labour is largely used in its upkeep and harvesting. With little

²⁰It has been argued that it is labour that acts as the limiting factor in the production of drug crops in some source areas [26, 27, 43, 63, 68]. However, the use and availability of hired labour in most drug crop producing areas seems to suggest that it is not labour availability per se but the availability of unpaid family labour, or cheap labour, that acts as the real constraint on drug crop cultivation [28, 37, 69].

²¹The exception appears to be in Colombia where it is reported that plantations of 15 hectares or more are financed by traffickers [10]. This is not confirmed in any of the other literature reviewed for this paper.

²²Phillips has indicated that the rural cultivator in Afghanistan will balance the amount of land sown with poppy with household food requirements. When basic foodstuffs such as wheat and flour can be easily purchased for reasonable prices the farmer may opt to dedicate a greater proportion of land to poppy cultivation. However, when wheat becomes too expensive or too difficult to purchase the farmer will reduce the amount of land planted with poppy and increase wheat cultivation, until the balance of the two corresponds with household food and cash requirements [23].

²³In Afghanistan the weeding of opium alone has been estimated to require 225 days per hectare. Moreover, harvesting is considered particularly labour intensive due to the relatively short time period that the pods remain productive and the skilled nature of the task [72]. Tapp has estimated that for the Hmong of Northern Thailand less than one fifth of a hectare would require one person month of labour [32]. Estimates with regard to the total amount of labour required per hectare of poppy in the highland areas of Laos and Thailand, vary between 300 and 486 person days, compared with 69 person days per hectare for rice, 178 days for paddy, 79 days for maize and 138 days for chilli [60, 63, 73]. Estimates of labour requirements for coca range from 69 to 368 days per hectare according to the intensity of cultivation. The demanding labour requirements of establishing coca have meant that most households need to hire labour in excess of traditional family and reciprocal labour arrangements [74]. In the Upper Huallaga Valley, Peru it is households with the smallest areas of cultivable land that have relied the most heavily on hired labour, despite its relatively high cost [21, 75].

value attributed to this source of labour both coca and opium can make an important contribution to household income even where price is below theoretical costs of production [21, 75].

Consequently, comparisons that have focused on net returns on land may have proved misleading. Although net returns per acre will often be more profitable for drug crops than legal alternatives due to labour intensive production, net returns on labour may be much lower due to the substantial labour requirements of coca and opium cultivation [76]. Indeed, some commentators have suggested that without the extensive use of unremunerated family labour neither opium nor coca would be profitable crops [21, 23]. This is supported by the general reluctance of households to hire labour throughout the season and maximise drug crop cultivation [66, 77].²⁴ This suggests that after deductions for hired labour, returns are not necessarily as remunerative as other crops. Indeed, in Afghanistan it has been claimed that rising labour costs in the 1994/5 season were partly responsible for the decline in opium production [10, 23].²⁵

In an attempt to minimise labour costs households have adopted a myriad of strategies. The primary emphasis of resource poor households has been to limit household production to a level that is as commensurate as possible with the availability of family labour [28, 36, 63, 69]. Staggered planting has also served to both reduce the threat of crop failure and spread the demands on family labour and reciprocal labour arrangements, minimising the need for hired labour [63, 64]. For some households the ability to negotiate particularly favourable sharecropping arrangements²⁶ and the availability of addict labourers²⁷ has prompted more intensive opium production.

Securing access to unremunerated or cheap labour has had important ramifications for the socio-economic position of the household and its members. A major determinant of socio-economic differentiation was found to be the amount of harvested opium that could be sold rather than used for wages or household consumption amongst the Lahu [60]. An emphasis on family labour has resulted in particularly low levels of literacy amongst the Hmong of Laos, and poppy producers of Dir [67, 81]. Moreover, licit agricultural production has been constrained by the high rural labour costs caused by the seasonal demands of both coca and opium [35].

A better understanding of the labour and land constraints that households face would assist in the design of more appropriate interventions. More information on the economic returns of land and labour on drug crops, and their alternatives; the allocation of labour among different farm activities;

²⁴Despite the important role that drug crops play in the economy of the household, priority is often given to subsistence crops [52, 60, 65]. Indeed, Miles has indicated that the Lisu will often substitute labour spent in the harvesting of poppy to clear grain swiddens. The reason for this choice is explained in terms of the opportunity cost to labour. Although poppy is thought to provide higher returns the season is limited to less than six months per annum. The value of the grain produced throughout the rest of the year far exceeds the income they forego preparing rice and maize fields. Multicropping offers drug crop producing households a total return on labour that overwhelmingly compensates for the reduction in labour productivity resulting from decreased opium cultivation [73].

²⁵Clawson and Lee suggest that labour is the most significant factor in household production costs for coca, accounting for 64-92% of total costs depending on technical level of production.

²⁶In Afghanistan, opium cultivation is generally undertaken under annual sharecropping arrangements. Although agreements will differ, in general landlords will secure as much as two thirds of the opium harvest [78, 79]. This access to cheap labour has prompted some landowners to actively seek skilled farm labourers from neighbouring districts to grow opium on a sharecropping basis [80]. The use of modern inputs means that both landowner and sharecropper can maximise their returns on labour.

²⁷In Thailand and Laos labour costs have been minimised through the use of opium addicts. This has prompted some ethnic groups such as the Hmong and Lisu to locate their villages near Karen villages where there is often a ready supply of addicts [60, 64, 66].

and the gender division of labour is required by policy makers.²⁸ Where labour is a constraining factor greater emphasis needs to be given to increasing labour productivity rather than increasing the yields of land. This will have an impact on drug crop cultivation and wider implications for family labour, releasing it to undertake other activities. This is particularly important for rural women who have been largely ignored as decision makers within the household and generators of value and income in the production of both coca and opium [22, 82].²⁹

The role of credit, debt and village traders

The cultivation of opium seems to be intrinsically linked with informal rural credit in source areas, where opium cultivators gain preferential, if not sole access, to informal credit arrangements [28, 43, 83]. However, the prevalence of household food deficits and the illegality of the opium trade expose the most vulnerable to exploitation from village traders. Through the provision of consumer goods, the extension of credit and the offer of a ready outlet for opium, village traders gain a significant influence over household finances and thereby household decisions with regard to crop production priorities [60, 73]. As such, the level of existing and expected household debt becomes an important determinant of the extent of annual household poppy production.

In Dir, Pakistan the end of the winter season is a time of particularly heavy borrowing, when dwindling cash reserves need to be supplemented with credit to satisfy subsistence requirements and purchase agricultural inputs in preparation for the new agricultural season [48, 67]. To gain access to these goods households can either exchange surplus opium they have from the previous years harvest, or obtain credit in either cash or kind from the village shopkeeper, on the understanding that repayment will be made in opium [26, 48, 67, 68].

Similar methods of credit and repayment operate through Chinese Haw traders in Thailand and Laos, many of which are former caravaneers who have settled in highland villages [63]. The profits on trade are substantial with consumer goods 50-100% higher than their lowland price. Repayment in opium is often 100% higher than the value of the cash or goods originally lent and is often as much as 50% of the total harvest [60].

The growing dependency on poppy as a sole source of cash income has meant that households have become particularly vulnerable to its fluctuating price. The occurrence of dramatic falls in price has prompted many households to increase their level of borrowing so as to meet their household expenditures [28]. Continued shortfalls in food production and the offer of credit have led many households to run up substantial debts. The result is often a spiral of debt that forces households to

²⁸It was widely stated during the author's visit to Dir, Pakistan that women were not involved in the harvesting of opium poppy but do play an important role in the extensive sowing, weeding and hoeing needed. Other reports have suggested that women do harvest poppy particularly those from poorer households. Considering the role women play in other household farming activities especially livestock, it is unclear what impact increasing the legal agricultural production of the area will have on women's working hours and status. If the enforcement of the ban is expected to lower household income, women and children's working hours could increase, particularly within poorer households.

²⁹Killogly has suggested that the burden of the transition from opium based agriculture to non opium based has fallen disproportionately on girls and young women, resulting in '*more weeding; longer distances to fields; contouring and other soil conservation measures; and year round agricultural work as households plant a diverse array of crops in hope of hitting on one or two with a good market price that year*' (personal communication).

sell their opium crop short, at particularly low prices to local traders [28, 52, 85]. Poorer households in Afghanistan have been found to sell their entire opium crop 2-3 months prior to harvesting at 20-30% less than the harvest price [23, 72, 86]. The real gains for the trader are realised post harvest when prices can increase by as much as 100% within two months [79].

Evidence suggests that both opium and coca prices are often highly localised, dependent on the extent of oligopsonistic power that local traders exert. The dominant market position local shopkeepers and traders gain through the provision of credit and consumer goods is exacerbated by the illegal nature of the market for opium. Despite their dissatisfaction with local prices many opium cultivators will deal with village traders rather than risk arrest in the lowlands.³⁰ Producers, unable to look for alternative buyers for their opium due to debt repayments and the illegal nature of the industry, find their bargaining position severely weakened, particularly in the most inaccessible areas where the lowest prices are paid [26, 28, 60]. Consequently the relationship between creditor/buyer and debtor/producer is potentially exploitative [34].

Within this context households may be willing to adopt alternative crops even if they do not offer returns that are as remunerative as opium and coca. Indeed, there is considerable evidence that households are willing to reduce drug crop cultivation in exchange for appropriate technical and financial support and to escape repressive measures by both state and traders. However, many are unable to forego the cash income derived from opium and coca whilst they wait for profitable alternative production regimes to be developed and made available to them [61]. Opium's role as a means of obtaining credit during times of food scarcity reinforces the need for alternative development initiatives to generate secure alternative income sources before poppy cultivation will be eliminated by poorer households [26, 48].³¹ Greater attention needs to be given to supplementing this role if households are to be able to meet their subsistence, pay off their existing debts and risk planting alternative crops [33, 83]. Moreover, law enforcement initiatives aimed at village traders could prove particularly effective in simultaneously disrupting both the extension agents and farmgate purchasers of illicit opium.

Eradication, reverse conditionality and the relocation of production

The role of law enforcement in prompting changes in household agricultural practice is contentious. Some commentators have indicated that eradication is a prerequisite to creating the right conditions for successful alternative development [88]. Others have suggested that there are inherent contradictions between development and interdiction at the policy and operational level that have

³⁰In Dir, Pakistan, although local traders, known as *beopari*, were found to buy at the farmgate, the majority of the trade in opium was done with the local shopkeeper [26]. Indeed, the strong odour that emanates from raw opium makes its transportation a particularly risky venture, particularly for villagers who may not have access to the appropriate contacts [37, 85].

³¹However, credit in subsistence economies has proved problematic. Lack of land tenure in many source areas and citizenship in Thai hilltribe villages has exacerbated the situation [16, 33]. In the Chapare the credit arrangements set up in 1987 under PL-480 came under particular criticism due to its failure to offer households a financial bridge between eradication and the receipt of income from alternative crops. Indeed some have argued the stringent requirements of the loan programme, combined with the harsh repayment schedules exacerbated the economic position of those who took up the loan and may have led to an increase in coca cultivation [75, 77]. Moreover, with loans at a minimum of \$2,000 and an average of \$6,500 it is unlikely that this scheme reached small farmers [87]. In Thailand rice, seed, fertiliser, and medicine banks have proved particularly successful with regard to uptake and repayment in both Pae Por and Sam Mun Highland Development projects [14, 16].

impeded progress and increased the vulnerability of the poorest [75]. Consequently, the debate regarding the appropriate balance of carrot and stick remains one of the most intractable of alternative development, particularly with regard to the process of relocation.

It has been argued that individual and moral orientations toward drugs and the drug trade affect household decision making. Consequently, many households either will not entertain the possibility of growing opium or coca, or are simply too afraid to produce drug crops due to the social and legal condemnation they will endure. However, the concentration of opium and coca cultivation in specific areas has led many to believe that there is a cultural³² and economic consensus amongst local inhabitants as to the legitimacy of drug crop production [20, 79].

Alternative development has recognised this consensual framework and sought to implement social and economic change so as to reduce the acceptability of drug crop cultivation. Teachers, elders and religious representatives have been targeted to act as local change agents in this process. Law enforcement has served to indicate that drug crop cultivation is not only unacceptable but illegal. It has also sought to induce fluctuations in farmgate prices through the disruption of processing operations and supply lines [75].

The dramatic fall in coca prices in 1989 is believed to be attributable to the Colombian Government's concerted attacks on the Medellin cartel. More recently coca prices in Peru have fallen by almost a third after the capture of many of the Cali Cartel's leading members [89]. However, aggregate changes in the level of coca cultivation show little variance in response to widely fluctuating prices [90]. Opium cultivation has proven relatively irresponsive to declining prices once they have fallen below a given level [91]. This suggests that the lack of alternative sources of income and expectations of future price increases will induce many households to continue to cultivate opium and coca, albeit to a lesser extent. However, some households have responded to falling coca prices by undertaking basic processing, transcending existing cultural mores and participating in illegal activities [10].³³ Law enforcement can succeed in reducing cultivation at the margins but if alternative livelihoods are not available this may be achieved at the cost of social and political unrest.

Indeed, experience has shown that where eradication has been a precondition to assistance, farmers have opted to eradicate only some of their crop. In the Chapare households were found to retain 0.5 hectare of a total 2 hectares cultivated as an insurance against vulnerability. Complete eradication would only be considered once farmers were assured of viable alternatives [53].

Where complete eradication has been enforced without the prior provision of alternative sources of income it has had dramatic consequences for rural populations.³⁴ In the Tekshan valley, Afghanistan the loss of income incurred by households who complied with an opium ban introduced by their local commander, combined with limited access to irrigated land and the failure of substitute crops,

³²In the border areas of Thailand, Laos, Myanmar and China opium has traditionally been cultivated by the Hmong, Mien, Lahu and Lisu [85]. In Afghanistan and Pakistan opium cultivation tends to be undertaken by Pashtoons, except in Badakhshan [72]. Amongst many of these groups the intricacies of poppy raising and opium extraction is a component of every child's basic education [63].

³³Increasingly intermediaries are unwilling to buy raw coca leaf and are insisting on purchasing paste. Some growers are reluctant to undertake paste production and are moving out of coca cultivation. It is currently unclear what proportion of households are willing to undertake processing as a response to falling prices or the new demands of intermediaries.

³⁴Local initiatives aimed at reducing drug crop cultivation in Jurm, Kosh and Yaftal, Afghanistan led to increasing levels of vulnerability due to the lack of alternative sources of income [92, 93].

led to a shortfall in food supply and the migration of 1,500 families [93]. A similar phenomena was experienced in the Upper Huallaga Valley, Peru where not only was interdiction and eradication ineffectual in altering the underlying economic advantage of cultivating coca over that of legitimate production but the uncoordinated approach of the law enforcement and development efforts left households unable to meet their basic needs once eradication had occurred [94]. Consequently, small farmers whose coca was eradicated, migrated outside the project area and began cultivating coca in frontier zones as a means of safeguarding their livelihoods.³⁵

Within this context of increasing vulnerability it is perhaps rational for producers to respond to alternative development projects as if they were temporary bonanzas opting to receive assistance, but safeguard their livelihoods through relocating to more inaccessible areas on a temporary or permanent basis. Indeed, temporary relocation has been a common reaction to alternative development initiatives.³⁶ Of greater concern is the permanent shift of drug crop cultivation both in human and geographic terms and the concomitant loss in biodiversity that this has ensued, particularly in the national parks of Bolivia and Peru and the Northern Highlands of Thailand, Myanmar and Laos [21,94].³⁷

Indeed, it has been argued that alternative development has systematically failed to acknowledge the mobility of rural populations in source areas, where migration has been a traditional response to changing opportunities and risks in the rural economy [3, 21, 98].³⁸ In some source areas inappropriate development interventions and eradication in particular can be seen to have played a major role in the relocation of producers to isolated areas free from state authority [21, 40, 43, 101]. As such migration should be viewed as a litmus test of unsuccessful development initiatives [98].

The explicit link between reductions in drug crop cultivation and the provision of development assistance has led to incidences of reverse conditionality where local communities threaten, or begin to cultivate drug crops as a means by which to gain access to development interventions.³⁹ The

³⁵Bedoya estimated that coca cultivation either directly or indirectly may have led to the loss of 700,000 hectares of forest cover in Peru since the 1970s, 10% of the total deforestation of the Peruvian amazon this century [35]. Guerra and Hernandez put the figure nearer 9 million hectares [95].

³⁶It was reported that in Yaftal and Shewa, Afghanistan bans enforced by local commanders led to a shift in the location of poppy cultivation [72]. In Dir the scattered nature of landholdings provided farmers with the opportunity of diversifying their crop production, experimenting with alternative crops on irrigated land on the valley floor, whilst continuing to cultivate opium on unirrigated land in the higher parts of the valley. In more remote areas in Thailand and Pakistan relocation has involved crossing national borders to ensure cultivation can be undertaken unhindered [20, 32, 33, 38, 79]. Moreover, in Thailand it is reported that a favourite practice has been to plant opium within the boundaries of another village so as to divert blame should the plants be discovered [46].

³⁷In Bolivia, Isiboro-Secure and Amboro National parks have already been encroached by coca growers and there is thought to be an increasing threat to the Beni [96]. Abiseo National Parks and the National Forests of Von Humboldt, Huanoco and Biabo are also inhabited by coca producing peasants [35]. By May 1994, it was thought that Isiboro Secure National Park contained 1,500 hectares of registered coca cultivation and an estimated 5,000-6000 hectares of illegal cultivation (S. Calvani: personal communication). Estimates in 1996 suggested that illegal cultivation could have increased to 15,000 hectares.

³⁸In Bolivia, one quarter of the population was found to be residing in a place other than that of their birth in 1976 [99]. The Chapare in particular has been found to contain a particularly mobile population where a third of the population is thought to be transient and 10,000-22,000 families are said to have left the area in 1990. Moreover, falling opium yields and conflict have often acted as triggers for migration for the Lisu [34, 64, 85, 100].

³⁹In Kunar it has been suggested that some farmers have planted poppy adjacent to the road as a means by which to attract development assistance [23]. Whilst in Usherai, Dir, a 90% increase in poppy cultivation in

provision of compensation for eradicated crops has exacerbated this process. Not only have the authorities been unable to prevent households from restarting cultivation after payment has been made,⁴⁰ but there is evidence that compensation has encouraged other farmers to start cultivation in order to receive subsidies [10].⁴¹

Moreover, reverse conditionality has had serious implications for the allocation of project resources.⁴² Unsure of the resources and motivations of drug crop producers alternative development initiatives have often adopted a comprehensive strategy to improve the socio-economy of the entire area rather than target initiatives at drug crop producers or the poorest. In an attempt not to be seen to be discriminating against those that do not grow drug crops this has often included the better off who are less dependent on coca and opium for their livelihoods. This strategy does not satisfy the objectives of either alternative development or conventional development interventions.

Some commentators have argued that it may be more effective to separate the whole issue of essential rehabilitation and development, which are required for their own sake, from the issue of drug crop cultivation. Where drug crop cultivation is a livelihood strategy it is neither justified nor effective to make assistance dependent on conditions and clauses that cannot be easily enforced. Instead, emphasis should be given to a more subtle approach, based on substituting the safety net that drug crop cultivation has given resource poor households through increasing crop yields and encouraging agricultural diversity [23].

It is important that alternative development programmes do not assist drug crop cultivation. However, by their very nature they must assist drug crop cultivators. The point at which enforcement is brought to bear will depend on the particular motivations and circumstances of those households undertaking opium and coca cultivation. However, evidence does indicate that the timing of enforcement and its close association with the wider development programme may have played some role in the relocation of opium and coca cultivation. It is essential that the process of relocation is understood if alternative development is not to reduce cultivation in one area only to see it increase in neighbouring regions.⁴³

1996 was been largely attributed to the sub valley of Ali Gha Sar and its desire to be included in the wider district development programme (Saliheen Khan: personal communication).

⁴⁰In the Chapare, Bolivia households were paid \$2000 per hectare of coca eradicated. However, it was estimated that the cost to plant one hectare of coca is \$1,000 - \$1,500. Therefore for every hectare of coca eradicated 1.5 - 2 hectares could be replanted [10].

⁴¹This Report suggests that between 1988 and 1992, 23,000 hectares of coca were voluntary eradicated at an imputed cost of \$45 million. However, during the same period 29, 000 hectares were planted or discovered.

⁴²In Dir Pakistan the growing prosperity of the western valleys were often cited as an example of the relationship between socio-economic development and reduced poppy cultivation. Remittances from the Middle East, the availability of labour and local off farm income opportunities, were seen as integral to the low level of poppy cultivation in valleys such as Sultan Khel. Yet, Sultan Khel and other valleys on the western side of the Panjorka received assistance despite the low incidence of poppy cultivation. A decision justified not on the basis of poverty but that to neglect these areas would result in an expansion of poppy cultivation [26].

⁴³In Pakistan, successive alternative development initiatives saw opium poppy cultivation relocate to neighbouring districts. For instance, with the success of the Dir project in 1996, opium poppy cultivation became centred in the Ambar and Pranghar district of Mohmand and Salarzai, Utmankhel and Barang districts in Bajaur. These areas were not necessarily the most remote districts but those areas adjacent to former areas of cultivation in Malakand and Dir [43].

CONCLUSION

The success of alternative development has to be viewed within the context of what it can realistically hope to achieve [10]. Budget constraints,⁴⁴ the wider macro economic framework and the flexibility of traffickers, have all tended to undermine these interventions. Moreover, given existing levels of demand, economics dictates that where drug crop cultivation is squeezed in one area it will undoubtedly occur in another. Considering the prevalence of rural underdevelopment and the fact that only 35 square miles of opium and 11 square miles of coca are required to satisfy the entire cocaine and heroin demands of the United States there is a need for an approach that addresses both the supply of, and the demand for, illicit drugs if a sustainable reduction in the total amount of drug crops cultivated is to be achieved [93, 104].

Yet, at the local level experience has shown that alternative development has been closely associated with reductions in drug crop cultivation. Households have been found to abandon coca and opium cultivation despite their reported unassailable profitability [36, 43, 63]. Moreover, off-farm income opportunities and alternative cropping systems have led to increases in income in both absolute terms and relative to drug crops [15]. However, despite these localised successes drug crop cultivation continues to increase. Currently the motivations and circumstances that determine household drug crop cultivation remain largely unexplored. Consequently it is impossible to either attribute local reductions in drug crop production to, or disassociate new areas of cultivation from, alternative development initiatives. An analysis of the outcome of specific project activities has also proved problematic due to the scarcity of accurate base line data.

Research to date has generally focused on aggregate trends in drug crop cultivation at the national, regional and village level. Project appraisal, design and monitoring have concentrated on static data collection techniques telling us little as to how development and law enforcement interventions can influence decision making at the household level.⁴⁵ As yet there has been no in-depth study of the conditions and priorities that individual farmers take into account when making decisions about their involvement in the cultivation of drug crops.

This lack of detailed analysis at the household level means that current initiatives tend to regard the producers of illicit drug crops as a homogenous group. Alternative development initiatives have ignored the multi-functional role that drug crops play in the livelihood of the household and the diversity that exists amongst drug crops producers, in an attempt to bring about quick and visible

⁴⁴However, it is also worth recognising that despite the rhetoric financial aid for crop substitution and development assistance from the United States is still insignificant, only 10.6% of the overseas narcotics budget. Law enforcement, military counter-narcotics support and eradication still command over 65% of the total budget. Moreover, military counter-narcotics support is being given greater priority each year [102]. Also see Bertram and Sharpe 1996/7 for a discussion of the USG's allocation of resources to demand and supply side strategies [103].

⁴⁵Surveys have proven particularly problematic in drug crop producing areas, providing only a snapshot of complex and dynamic processes, offering little with regard to methodological rigour, and failing to cross check information to ensure its validity. Ahmed has indicated that population figures for the Pashtoon tribal areas bordering Afghanistan and Pakistan can be overestimated by as much as three to four times for the male population and significantly underestimated for the number of women. This is explained by a political and cultural framework in which men are associated with political and military prestige and any information regarding women is considered private, in keeping with the practice of seclusion [106]. Understandably, any information regarding more sensitive issues such as the extent and profitability of illicit drug cultivation will also be set within a wider political and cultural context, in particular what respondents believe the data will be used for.

reductions in drug crop cultivation.⁴⁶ The specific socio-economic, cultural and environmental circumstances that influence household production are consequently overlooked in project design. Rather, alternative development initiatives have adopted a uniform approach where emphasis is placed on the high economic returns that opium and coca are reported to accrue per unit of land [4, 19, 20, 22, 24].

This simplified model of human behaviour that emphasises economic rationality over that of other motivations is both inadequate and inappropriate given the variety of circumstances and opportunities facing drug crop producers.⁴⁷ It offers no explanation of the wide variance in drug crop cultivation at the regional, district and household level.⁴⁸ Moreover, discussions regarding the economic profitability of drug crops fail to account for the process of 'graduation' that many households in source areas have undertaken as they move from drug crop cultivation to licit economic activities without the provision of technical support from external agents. Documenting this process, and the reasons why a significant proportion of households continue not to grow drug crops in areas where they are cultivated intensively by the majority of farmers, could provide the framework in which to further our understanding of the role of social costs and economic profitability in household decision making in source areas.

Moreover, it is important to recognise that opium and coca meet the demanding requirements of both the local environment and the rural economy. Attempting to replace the income received from opium and coca with substitute crops is a necessary but insufficient condition for reducing the levels of cultivation. This strategy will only satisfy those wealthier households that produce illicit crops for extra income. Alternative development programmes need to recognise the high level of socio-economic differentiation that exist in source areas and target their initiatives accordingly. To achieve this greater attention needs to be given to the resource constraints, aspirations and motivations of the household and the wider community. For those most dependent on drug crops, interventions need to give precedence to securing livelihoods through the extension of food crops and the promotion of value added activities. For those less economically reliant on drug crop cultivation greater emphasis could be given to applying social and legal pressure. This strategy would satisfy the objectives of both alternative and conventional development interventions.

Any programme aimed at persuading farmers to change from cultivating drug crops to alternatives will require very close and patient involvement with the communities concerned. Emphasis will need to be given to the heterogeneity of drug crop producing households and how structural and motivational factors are prioritised across socio-economic, spatial, and cultural groups. Where motivations and resources differ, different interventions will be required. Only by ascertaining the role opium and coca play within the socio-economy of the household will effective and sustainable

⁴⁶*The result is a process of shooting from the hip in which large poorly considered projects are thrown at complex situations. The approach of the agro-industrial projects (Chapare), particularly is evocative of the 1960s development thinking, where it was felt we had all the answers and simply had to 'transfer' them to the grateful peasantry. In short, the drug control imperative is being used to justify the worst features of naive top down development' [8].*

⁴⁷Lee and Clawson suggest that '*perhaps USAID's approaches to crop substitution are too driven by economic models of peasant behaviour' [10].*

⁴⁸For instance, in Dir, Pakistan opium cultivation is undertaken in the valleys east of the Panjorka river. In the west, opium cultivation was always negligible. Moreover, in villages where drug crop cultivation is concentrated, although opium and coca are grown by a wide section of the community, they are not grown by all its members [20]. Even amongst drug crop producing households there is large variance in the extent of household cultivation and their commitment to drug crop cultivation [26]. This does not seem atypical of source areas [15, 23].

interventions be determined which apply the appropriate balance of carrot and stick, to the right people, at the right time. To continue in the current analytical vacuum could be seen to be rewarding those who have alternative livelihoods and ignoring those that do not. This not only has implications for the cost effectiveness of such a strategy but raises questions as to the unintended consequences of alternative development, particularly with regard to its impact on the poor and the process of relocation. Greater understanding of decision making at the household level would assist in determining more effective and sustainable initiatives aimed at reducing both existing, and potential drug crop cultivation, and improving the life choices of beneficiaries.

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