REPORTS AND INQUIRIES

Vocational Training and the Establishment of Service Workshops in a Poor Rural Area

The Experience of the Andean Indian Programme

In a recent article published in the Review [1] *Mr. Jef Rens, Deputy Director-General of the International Labour Office, described the fundamental aims, the work and the achievements of the Andean Indian Programme undertaken by the I.L.O. within the framework of the Expanded Programme of Technical Assistance, and in close co-operation with a number of other international organisations and the governments of the countries concerned in the region. This article deals with one particularly important aspect of the programme, namely vocational training, which is being provided through rural workshops established by I.L.O. experts in various districts of the Andean High Plateau.*

The Governments of Bolivia, Ecuador, Peru and Colombia are engaged in plans to integrate their Indian peoples into the national life so as to enable them to play their full part in their countries' economic and social development. An undertaking of this magnitude requires the co-ordination of a variety of different techniques to improve the living and working conditions of the Indians, who live for the most part in predominantly rural districts and are sometimes concentrated in inhospitable areas. The plans adopted by these four countries are based on surveys which their own national agencies and the I.L.O. have been carrying on and also on the experience acquired under the Andean Indian Programme, which was launched in 1954 by the first three governments mentioned, with technical co-operation from the I.L.O., the United Nations, the United Nations Food and Agriculture Organisation, the World Health Organisation and the United Nations Educational, Scientific and Cultural Organisation.[2] These plans consist largely of vocational training, fundamental education, public health, farm modernisation and land settlement schemes. They are administered from action bases set up under the Andean programme at Pillapi, Playa Verde, Cotoca and Otavi in Bolivia, Puno in Peru, Chimborazo in Ecuador and El Cauca in Colombia.

[1] J. RENS : " The Andean Programme ", in *International Labour Review*, Vol. LXXXIV, No. 6, Dec. 1961, pp. 423-461.

[2] The Colombian Government joined the Andean Indian Programme in 1960. The Governments of Argentina and Chile have also asked the I.L.O. to extend the programme to certain parts of their countries.

One of the problems which arise while industrialisation is going on is that of absorbing the large numbers of workers who come from rural districts where there are inadequate educational facilities into industrial employment. Apart from the measures taken in the towns and in industry itself to give workers from the countryside a chance of acquiring new skills, knowledge and habits, it is also advisable to try to include vocational training schemes suited to the needs of the people and the facilities available in the country in any development programme catering for rural populations.

This was the line taken in planning the Andean Indian Programme. It was considered from the start that vocational training was one of the most effective means by which educational and economic standards among the Indians could be raised. The reason is that vocational training in a primitive environment can help to "kill two birds with one stone". Teaching people how to work with materials like wood and iron has an educational value in that it raises the trainees' general standard of knowledge ; in addition, it has an economic value in that they learn from it how they can improve their everyday living conditions (e.g. their homes, household utensils, their tools, etc.). The training courses, apart from their intrinsic educational usefulness, equip individuals for gainful employment, either as handicraft workers in their villages of origin or in nearby communities or, alternatively—should they decide to settle down in industry or the cities—as wage earners in industrial and agricultural concerns in the region or in distant industrial centres.

All these possibilities were borne in mind in planning the vocational training side of the Andean Indian Programme. Although, of course, the Indians are close to the land, the fact is that for many years past there has been a spontaneous drift—which has gathered momentum with the years—to the towns where work is available. The kind of integration which the plan aimed at promoting was specifically designed to break down barriers—in other words, not only to improve the living and working conditions of the Indian peasants in their normal environment, but also to give them an opportunity of moving from one productive occupation to another. In this way the different forms of labour and types of production which are now found side by side in each country would indirectly make their influence felt on each other.

Approach and Working Methods

The first step was to study the needs and potentialities of the Indian villagers—which vary according to the level of education of individuals and the social structure, technical development and economic habits of the communities in which they live. Another aspect was the demand for skilled and semi-skilled labour in the neighbourhood and in more distant towns, or that which could be expected to arise as a result of national or regional development plans. The choice of the methods to be used was another problem. For this purpose it was assumed that the Indian communities could be divided into three types : agricultural without mechanisation, agricultural with mechanisation and incipient handicraft industries, and rural with prospects of development for small-scale industries [1] ; that the training would have to be given to young people

[1] This classification was simply used as a working hypothesis. The Indian communities are undergoing various changes, and in order to keep in step with these developments the classification will have to be revised from time to time.

and adults who would, as a rule, have had only a short spell of primary education followed by a fairly long period without any instruction at all ; and that the length of the courses would have to be adapted to the habits and leisure time of the Indian villagers, whose working days and seasons are dictated by the extreme rusticity and poverty of their way of life.

In view of these features and the two aims mentioned earlier—elementary vocational training to improve local living and working conditions and instruction in typical jobs belonging to the basic trades—two approaches towards the training of the Indians were adopted in the Andean Indian Programme. One of them, which was centralised, involved holding courses for young people and adults in quite highly mechanised workshops set up for the purpose at each action base. The other—the decentralised approach—consisted of encouraging the opening of rural, communal, or handicraft workshops at various points in the area covered by each action base, reliance being placed on the efforts of the Indians themselves, with help from the base, and especially from the vocational training department at the central workshop.

The Organisation of the Central Workshops

Central workshops were opened at the action bases at Pillapi, Playa Verde, Otavi and Cotoca (Bolivia), and in the village of Guano near the action base at Chimborazo (Ecuador). In the area covered by the base at Puno (Peru), central workshops were opened in the villages of Chicuito, Camicachi and Taraco. The machinery and tools of these workshops were obtained partly with contributions from the budgets of the Governments concerned and the United Nations Expanded Programme of Technical Assistance, and partly through a number of substantial gifts received from employers' associations, trade union federations and governments of various countries as a result of I.L.O. appeals.[1]

A typical central workshop consists of a carpentry section and a metalworking section, each of them catering for between ten and 15 trainees.[2] The latter section is organised to give training to locksmiths, tinsmiths, blacksmiths, welders and vehicle and motor mechanics (who are also trained to repair electrical installations). The syllabus in each workshop is designed to achieve the following objectives : to give basic vocational training to young people and adults so that they can set up as handicraft workers in the area or find jobs in mining or industry ; and to facilitate the extension of elementary vocational training in the Indian villages by, for example, providing training for demonstrators or instructors in the village workshops and acting as a place where all the vocational training staff in the sphere of influence of the base can meet from time to time.

Initially the I.L.O., at the Governments' request, selected two international instructors with special experience in the teaching of trades involving carpentry and metalworking for each of the central workshops.[3] Subsequently a co-ordinator's post was established and a voca-

[1] A list of the gifts received so far will be found in the appendix to J. RENS : " The Andean Programme ", op. cit., pp. 459-461.

[2] The central workshop at Guano also contains a textile section equipped with looms and equipment for washing and dyeing wool or cloth.

[3] A metalworking instructor and a weaving instructor were sent to the Guano central workshop.

tional training expert appointed to it. These experts, together with those sent by other international organisations to give advice in their respective fields (fundamental education, health, agriculture) work in direct collaboration with the head of each action base. The members of each of the technical teams help to execute the base's general programme while at the same time training their national counterparts.

The tasks assigned to the international vocational training experts can be classified under two headings : the installation and operation of the base's general facilities (housing for the staff, electricity generator, vehicles, etc.) ; and vocational training as such—which is of course by far the more important. The experts were instructed to get the facilities running as soon as possible and to train local staff to look after the general services with all speed so as to be free to devote the whole of their time to their proper task of vocational training. This involved fitting out the workshops, establishing and conducting teaching programmes and giving further training to the local instructors.

Normally, the international instructors were expected to give standard or advanced training in technical subjects or teaching methods to two local instructors in each section of the central workshops. Such training was to be given as part of the work of each section and to be fitted into the regular courses ; if necessary, days could be set aside or shorter courses organised for systematic study. Future local instructors were to be selected and placed under contract as different sections and subsections of each central workshop were fitted out and brought into operation. The suggested order of priority was that training in carpentry should come first, followed by courses for locksmiths, tinsmiths, blacksmiths and welders, and, lastly, by courses for vehicle and motor mechanics.

The courses were expected to vary in length from a few months to two years. They could consist (depending on the object of the course) entirely of woodworking, metalworking or motorcar maintenance ; or alternatively they could consist of woodworking and metalworking combined in a polyvalent syllabus whenever the course had to cater for future village workshop demonstrators. The recommended teaching method was that programmes should be made up of manual tasks of practical value arranged in increasing order of difficulty. Each job in the series would form the centre of interest at a particular stage and would be the basis for any additional instruction in mathematics, theory, the reading of drawings and the observance of safety standards. As is well known, this method of organising instruction helps to arouse the intelligent interest and to ensure maximum participation by the trainees.

Establishment of Workshops in Indian Villages

The initial aim was to establish workshops in the Indian villages that wanted them and were prepared to assume certain obligations in order to keep them operating. Each workshop would have to be built in the main by the village itself, although aid would be forthcoming from the base in equipping, organising and starting it. It would consist of a number of sections, e.g. a carpenters' shop, smithy, weaving shop and dressmaking section, with nothing but manually operated equipment. The amount and variety of tools and equipment required would depend on the village's own needs and resources as well as on the physical or financial resources of the base itself. To begin with, the workshop would be supervised by a committee made up of members of the village or, alternatively,

would be placed under the control of the most appropriate village authority or institution, which in turn would appoint a manager. This committee or manager would receive technical aid from the vocational training instructors at the central workshop at the base ; by slow degrees, the village would take over the running of the workshop until it was fully responsible for its management and future development.

In these workshops the members of the village would be given an introduction to a trade, either continuously from demonstrators who had previously been trained at the central workshop (future demonstrators would be chosen by their villages, which would contribute to their maintenance during their initial training at the central workshop), or intermittently by national instructors from the central base workshop attached for short spells to the village workshops.

This introduction to a trade would be given whenever the adult members of the village proposed to undertake some task of particular value to themselves or to the community. When appropriate, the village could allow the workshop to be used to give pre-vocational training to the schoolchildren. As can be seen, the village workshop under this scheme was designed to serve not only as an educational extension unit but also as a device for supplying the peasants with the tools and methods they needed to manufacture articles of everyday use.

Under the scheme the workshops could develop in one of two ways. In some cases they would become village property and remain available to all members of the community, while in others they would be run privately by a single villager or by a number banded together to form a handicraft society, the rent payable to the community by the new owners being fixed by agreement.

Courses at the Central Workshops

The construction of premises and the equipment of the central workshops was done by stages as funds and staff became available. The Andean Indian Programme had to advance simultaneously in a number of different fields using limited resources which fell considerably short of the Indians' tremendous needs. By the middle of 1961 the central workshops were more or less fitted up (although plans are constantly being made to improve them) by such means as acquiring additional equipment and building extensions to house the trainees. For example, the modernisation of the building made available for the central workshop at Guano was recently completed, and new premises have been built to which the central workshop at Taraco will be transferred ; work has also begun on an extension to the central workshop at Chucuito which will make it possible to house the trainees more comfortably than hitherto.

The vocational training departments of the action bases have organised a variety of courses in recent years. Thus, basic training courses for carpenters, locksmiths, blacksmiths and motorcar mechanics, each lasting two years, have been held at Chucuito ; combined courses in woodworking and metalworking, each lasting one year, have been held at Camicachi ; training courses for tractor drivers have been held at Camicachi and Pillapi ; and elementary handicraft courses in wood and metalworking for future demonstrators in the village workshops, each lasting between two and four months, have been held by all the central workshops.

The figures compiled by the Pillapi and Puno action bases show that, up to the end of 1960, 48 young people and adults had taken the basic courses in carpentry and metalworking, while eight had taken the tractor driver's course, at the central workshop at Pillapi. Of the latter, five had previously completed the combined course just mentioned, so that the total number of trainees was 51. In addition, ten of them took the additional short courses in carpentry and metalworking held in 1959 and 1960 to acquire a higher standard of practical and theoretical knowledge than they had reached earlier in the basic course.

In the Puno area a total of 152 young people and adults had received training—70 of them at Chucuito, 37 at Camicachi and 45 at Taraco. The breakdown by type of course is as follows:

Carpenters (two years)	42
Carpenters (one year)	8
General mechanics (two years)	15
Metalworkers (one year)	29
Carpenters and metalworkers (one year)	14
Tractor drivers and mechanics (one year or less)	21
Motor vehicle mechanics (two years)	23
Total	152

The age of the trainees ranged from 15 to 25. Some of them were married, with children, but managed to complete these full-time courses without pay owing to the help given by their families.

Establishment of Programmes and Further Training for Local Instructors

In drawing up the programmes the international instructors not only took into account the current needs of industrial occupations in urban areas, but also made personal contact with the heads of the Indian village communities so as to find out about the traditional products in the region. Visits to homes and a study of working tools and the articles for sale at local markets also helped them to deduce what type of skills should be taught. As a result, programmes for manual workers such as carpenters, metalworkers or motor vehicle mechanics consisted wherever possible of instruction in useful skills such as the manufacture of articles (or components of articles) in everyday use and the performance of repair jobs. In addition, the fitting out of premises and installing of equipment to expand the capacity of each base provided an opportunity for giving practical work to some groups of trainees who had reached a sufficiently high standard of skill and knowledge to overcome the difficulties involved. The jobs selected for them were, first of all, analysed from the educational standpoint and then arranged in growing order of difficulty and broken down into elementary operations. For each new job a printed folder was prepared, giving explanations about the main difficulties in concise language and illustrated by drawings. The whole series of folders was then bound together for the guidance of the national instructors in each section and subsection at the workshop. The elementary theoretical knowledge included in the programme only covered such points as were necessary to understand the manual operations and the handling of the machines employed. Under this method, each unit of work formed the centre of interest around which the teaching of theory, elementary mathematics, the reading of working drawings and the maintenance of safety standards all revolved.

The local instructors assigned to the central workshops were trained by the international instructors to follow this method, which requires a single instructor with the ability to teach both the theory and the practice of the trade.

Language and mathematics courses were held, mainly at Chucuito, to improve the trainees' general knowledge, as a supplement to the basic workshop programme described earlier. In deciding the content of the syllabus and the method of teaching to be employed, the importance of co-ordinating it closely with the progress of workshop training was borne in mind. The practical examples were chosen from among the problems that constantly arise in a handicraft business or in industry itself, such as the drafting of letters to suppliers and customers, the estimating of the amount of raw materials needed for a given job or the calculation of elements in production costs and sales prices.

The further training of the local instructors attached to the central workshops was usually done on the job by associating them as closely as possible with the day-to-day work of the international instructors. As they were not thought to be making sufficiently quick or thorough progress in some cases, other and more effective methods were used. For example, at Chicuito in 1960 every Monday was given over to systematic further training for the local instructors in subjects such as drawing, mathematics, physics, mechanics and the theory and practice of teaching. In Bolivia, on the other hand, it was decided to hold a special six months' course at the central workshop at the Pillapi base for which the instructors serving at the other bases in the country, together with a number of would-be instructors, were brought together towards the end of 1959. After selection, eight carpentry instructors and six mechanical instructors were appointed. The syllabus devised by the international instructors comprised the following subjects: mathematics, general theory, technical drawing, practical work and teaching methods. The trainees were divided into two groups, depending on whether they were taking carpentry or metalworking. The national metalworking instructor at Pillapi and the carpentry instructor at Playa Verde—both of whom were confirmed in their posts—took the theoretical courses and assisted the international instructors in the programme of practical work.

The Method Used to Establish the First Village Workshops

During the first stage the establishment of workshops in villages was the responsibility of the vocational training group at each action base. Contact was made with the leaders of each of the Indian communities in turn, to explain to them the advantages of having a workshop at the disposal of all the villagers and to find out whether they would be willing to take the initiative in opening such workshops with assistance from the base. In every case they were in favour. Nevertheless, although their interest was genuine it was clear from the start that the base would have to give a substantial amount of help in building the premises, supplying the tools and drawing up the rules of operation for each workshop.

The building of the workshops inevitably took some time; and, in order to take advantage of the enthusiasm displayed by some villages, temporary workshops were in some cases opened in houses lent by individual Indians, which were fairly suitable for the purpose but usually needed patching up. Meanwhile a standard layout was designed for general use, subject to any special alterations that might be needed in

individual cases. This layout consisted of three rooms—one for carpentry, one for metalworking and one for dressmaking.

Comparisons between different types of construction led to the conclusion that the method most suitable for use in the rural environment of the Andean High Plateau—from the standpoint of economy as well as that of serviceability—was to build the workshops with adobe walls and thatched roofs. In some instances, especially when there was not enough good straw or sound timber available, the workshop was roofed with a light framework covered with zinc sheeting.

The following variations were made on the standard layout :

(a) two-room workshop : one room for carpentry and the other for metalworking. This type was employed whenever it was initially impossible to open a dressmaking room owing to the relatively high cost of the sewing machine.

(b) four-room workshop teaching carpentry, metalworking, dressmaking and weaving. Where (as in the Guano district) weaving is an important industry, one or two looms were installed in a separate room.

The village's own contribution towards its workshop usually consisted of the site, the labour and the roofing materials. The base supplied the doors, window frames and windows, together with any cement needed to strengthen the building.

In many cases the base sent a stonemason along to supervise the work of the volunteers. The instructors from the central workshop gave the villagers the benefit of their advice at all times and moral support to keep up their enthusiasm until the job was completed.

The base provided each of these workshops with a set of hand tools. A typical set consisted of the following items :

Carpentry Workshop

Two carpenter's benches	Two 20 mm chisels
Three 200 mm metal vices	One 7 mm gouge
Two large planes	One 10 mm gouge
Three small planes	Two hand saws
One 1.20 mm screw-frame	One mechanical saw
Two mallets	One hone
Two hammers	One sander
One file	One brace and bit
Two 200 mm squares	One set of six 6 mm-20 mm drills
One screwdriver	One level
One pair of pliers	One plumb-line
Two 8 mm chisels	Two marking gauges
Two 12 mm chisels	One glue pot

Dressmaking Shop

One sewing machine

Weaving Shop

One or two looms

Metalworking Shop

One fitter's bench with vice	One round, medium smooth 200 mm file
One leg vice	One half-round, medium smooth 250 mm file
Two 300 mm flat bastard files	One marking tool
One flat file (7 × 2.5 mm)	

One awl
One 750 gramme hammer
Two screwdrivers
One spanner
One pair of pliers
One portable forge
One anvil
One sledge hammer
One hand drill with ten bits (3 mm-10 mm)
Two chisels (thick and medium)
One hand sander
One metal hand saw
12 saw-blades
One folding rule
One pair of pincers
One 1.5 kilo hammer
One 16 mm plane
One hot chisel
One small anvil
One pair of flat tongs
One pair of chisel-holding tongs
One soldering iron with accessories
One universal hand cutter

In return for these tools, which are lent for an indefinite period, the village undertakes to maintain them properly, to use them with reasonable frequency, to replace them as they wear out and to enlarge the set in accordance with arrangements to be made with the base.

Initially it was not possible to insist upon strict observance of the last three conditions ; but as time went by, the persuasion of the central workshop staff began to take effect and in due course the great majority of the workshops carried out these three obligations.

The foregoing paragraphs describe the method employed to arouse the interest of the Indian peasants in the establishment of village workshops. This method was followed until the first workshops were opened, when it was hoped that the effect of their example would ensure future success, even if they did not immediately reach the standard of quality hoped for. As was mentioned earlier, the main initial responsibility fell on the vocational training department at each base, working in co-operation with other departments, such as those for social assistance and rural welfare, under the general supervision of the head of the base. Once a number of workshops were in operation, the training department was made responsible for putting them on a sound footing by giving them technical advice, while the task of promoting the establishment of new workshops was handed over to the rural welfare department. Today propaganda is no longer necessary, and the bases simply take note of requests from villages wishing to open up their own workshops. All of these requests cannot be acted upon because the bases do not possess —and cannot afford—sufficient sets of tools to be able to lend them to all the applicants.

Methods of Co-operation Used to Co-ordinate the Efforts of the Indians with the Aid Given by the Central Base Workshop

The aid given by the bases during the building and fitting out of village workshops was described in the previous section. Care was always taken to avoid making outright gifts so as to ensure that the Indians participated to the greatest extent possible. It will be recalled that at this stage, apart from giving a certain amount of essential material help, the bases gave technical advice and lent the initial set of tools.

Once a workshop was in operation, the aid it received from the base usually took the following forms :

(a) the training of instructors ;

(b) visits to give advice on working or administrative methods;

(c) co-operation in tasks too big to be carried out with the limited resources of the village workshops ;

(d) the loan of additional tools ;

(e) advice on the design and preparation of new products.

The principal form in which aid was provided was that of training for future demonstrators at the central base workshops. These training courses varied in length depending on circumstances and the money available.

Periodical visits by the central workshop instructors (an essential part of the training process) helped to maintain a check on the operation of each workshop, and the demonstrators were given any technical advice they needed to cope with the work in hand (e.g. how to plan it properly, make drawings where necessary, calculate the amounts of raw material needed, design and execute the work and handle various aspects of administration and bookkeeping).

When a workshop has to tackle some unusually difficult task, the visiting instructor does all or part of it himself and takes advantage of the opportunity to carry the training of the demonstrator and the villagers concerned one stage further. Whenever the job cannot be done in the workshop owing to the lack of some essential tool or piece of equipment, the instructor looks into the matter and submits a report to the head of the base. If the latter, after considering the cost, the time limits involved and various technical factors, concludes that the proposal is worthwhile (even if not always in financial terms) the job is carried out by the central workshop. On the other hand, if the difficulty can be overcome by lending the village some easily transportable tool or piece of equipment, this is done whenever possible, so that the work is actually performed by the people who will benefit from it.

Another form of co-operation has been the manufacture of utensils, equipment or tools which are easy to produce and therefore very useful in a rural environment. The central workshops produce one or more prototypes, adapting the manufacturing process to the tools available in the workshops, supplies of raw materials and the standard of skill among the demonstrators and workers. Once the design stage is past, a proposal is made to the nearest workshops that they should make the new product, and a trial is made by those that are willing to do so. It is always best to begin with the nearest workshops, as this makes it easier to deal with any initial defects discovered during the experimental stage. A specification is then drawn up giving a description of the manufacturing process so as to make the details as widely available as possible.

Development of the Village Workshop into a Handicraft Workshop

The first workshops adopted rules of administration which made them communal undertakings open to all the inhabitants of the village and operated by a committee or manager elected by them.

For each section of the village workshop—the carpentry room, the metalworking room, the weaving room or the dressmaking room—a demonstrator is appointed either for an indefinite period or for a renewable period of one year with responsibility for the technical side of the work being done in his particular room. Any member of the village may make things in the workshop for himself or, alternatively, can band together with other villagers to do something on behalf of the community. The demonstrator is responsible for advising them and for

teaching them any operations they are unfamiliar with. The appropriate authority fixes the fees to be paid by the users, the money being spent on replacing or mending the tools and buying new ones. The demonstrators are usually paid, not in cash, but through an exchange of services.

During the initial period the village workshops at Guano and Puno functioned quite well. The registers at each of them show that they were widely used by considerable numbers of villagers to make clothes, doors, windows, furniture and working implements or to repair ploughshares and bicycles. Even today, there are village workshops with a satisfactory output at seven places in the Puno area.

On a number of occasions, however, difficulties have arisen. For instance, rooms may be monopolised by persons who want to do jobs for which they are being paid ; some committees neglect their duties, so that the workshop's future depends on the keenness of the base staff ; instructors sometimes lose all hope of receiving any pay or incentive from the village and leave ; and, lastly, the initial interest shown by the villagers sometimes slackens as a result of difficulties caused by local circumstances or the fact that the base is unable to give all the necessary aid at the right time.

In the Pillapi district, apart from a few exceptions, the idea of the village workshop had to be abandoned fairly quickly. In some cases the workshop was linked with the local farming co-operative, to which all the villagers belonged. The co-operative then made a small capital grant to the workshop to start it off and appointed the demonstrator, who was given a percentage of the workshop's earnings instead of a fixed wage. In other cases it was decided to organise handicraft societies whose members (numbering between 20 and 30) each contributed something towards the initial capital.

These variations show that an effort was made to adapt the original simple formula of the village workshop to the social and economic conditions of communities in very different stages of evolution. In these villages, side by side with the subsistence economy characteristic of traditional farming and handicraft methods, the market economy is also represented by tailors, shoemakers, carpenters, blacksmiths and tinsmiths, who tend to specialise in their trades and are usually paid for their services in cash.

While it is certain that the Indian peasant initially welcomes the idea of a village workshop which places a whole set of tools at his disposal, he is bound to be disappointed once he finds that the tools are only sufficient to allow two people to work at the same time and that the ones he wanted are being used by somebody else. Similarly, it is quite understandable that the demonstrator should lose heart when, after taking the course at the central workshop and spending some time teaching his neighbours various working techniques, he finds that the village does not reward him adequately for his services. Moreover, once he has acquired the skills needed to perform certain jobs he naturally feels tempted by the idea of earning his living in this way and prefers to do outside jobs instead of spending his time giving instruction which is only partly understood by the other villagers.

A workshop linked with a farm co-operative would appear to have some advantages over a village workshop in that a co-operative is a more durable institution than a committee set up specially to administer a workshop. However, there seems to be no answer to the problem of paying the demonstrator adequately. As the co-operative is a village enterprise, the demonstrator is automatically tied to the village—which

does not always make economic sense because usually the demand in a single village is not sufficient to keep him fully occupied. Although distances between villages in the area are not great, an effort has been made to open a workshop in each of them. This policy is a sensible one if the village workshops are predominantly social and educational in purpose, but it is not the way to make them economically self-supporting.

Handicraft societies were founded in an attempt to give a stake in the workshops not so much to all the members of the village or co-operative but to the members most likely to give them their support. Here, of course, the economic aspect was given greater emphasis than in the other cases. But, unfortunately, earnings were barely sufficient to pay the demonstrator, and nothing was left over to share out among the members in the form of profits—as a result of which many of them lost interest.

In view of the difficulties of operating workshops organised along the lines just described, new workshops were opened in the more prosperous and advanced villages by demonstrators who were dissatisfied with the state of affairs or former trainees from the central workshops who were anxious to set up in business on their own account as handicraft workers.

These examples of individual initiative were backed up by the action bases on the ground that they were a step in the right direction and were perhaps better suited to social and economic conditions in some villages than the original workshops. Each base, as far as possible, supplied the handicraft workers with much the same services as those provided to the villages when the first communal workshops were set up. The vocational training departments at the bases have established close and effective working relations with them, probably because, being independent and determined to make good, they fully realise that success depends on the quality of their own work and are aware from personal experience of the ample opportunities for further training afforded by the bases.

The handicraft workshops are operated in the usual way: the workers decide for themselves what to charge their customers, although in doing so they have to allow for the generally low level of incomes.

These workshops were the last to be established. In a sense, therefore, they are the outcome of the slow development of the village workshops from the communal form to the stage of individual operation. While there can be no doubt that the latter type are more prosperous than the former in the advanced villages, this does not alter the fact that the only practicable way of introducing tools and methods of working materials such as wood and iron in the other villages is through the communal workshop with strong support from the base.

Review of the Results

At present, there are eight central workshops in operation: one at each of the four bases in Bolivia, three in the area covered by the Puno base and one at Guano in the area covered by the Chimborazo base.

At Pillapi 51 peasants have been given vocational training, and in January 1961 they were employed as follows: 12 had jobs in handicraft workshops; one was employed by an independent carpenter; six were in jobs which had no connection with their training; and 32 were employed in agriculture. There are 12 village workshops in the area which are being helped by the central workshop; with the exception of

one which is run by the farm co-operative, the others are privately operated or are steadily moving in that direction.

At Playa Verde there have been two introductory courses in carpentry and metalworking, and three communally run workshops have been opened. Of the 16 trainees, three are working in the village workshops just mentioned, two have been employed as wage earners at the central workshop and one is employed in a carpentry workshop at Oruro. The remainder have gone back to their former occupations in agriculture.

At Otavi, owing to lack of money for vocational training courses, it was decided that the central workshop should concentrate on production rather than education. By the beginning of 1960 the group of young Indian peasants who had been making various wood and iron articles for private individuals or various departments at the action base joined together to form a co-operative society. The latter split up after one year's operation, and its members set up on their own account outside the central workshop. At the beginning of 1961, despite acute shortage of money, the base succeeded in organising a first short vocational training course. Owing to the scanty resources available, only six trainees could be taken on, and they were paid a daily subsistence allowance. In order to eliminate all waste, the practical work was largely utilitarian so as to cover at least the cost of the raw materials. The course lasted six months, during which the pupils were given a basic training in carpentry and certain metalworking techniques.

Subsequently it is intended to help these trainees to form a new co-operative society which will be allowed to make use of the central workshop for a time. Thus, without being a charge on the base's budget, they will be able to continue acquiring experience in the trade and will also learn how to operate a small handicraft business along commercial lines—to make direct contact with the customers, to calculate their own costs and to deal with all the other problems that arise. During the second stage they will, of course, be helped by the national instructor at the base.

Since the purpose of this co-operative society is to supplement the training given during the short course, members who find jobs elsewhere will be given every assistance instead of being discouraged from doing so. When they have all found jobs, the instructor at the base and the central workshop itself will once more be available for a further training course for another group of Indians. In this way, despite its limited resources, the base is pursuing its objective of training workers to earn a living in the workshops already in existence in the area or, alternatively, to set up as handicraft workers on their own account. This transitional period between the short course and entry into employment enables some of the trainees to save towards the cost of their own workshops while also supplementing their training. The base helps them to some extent once they have become independent, but for the time being at least it does not intend to establish village workshops as it is not in a position to organise or manage them.

At Cotoca it took some time to launch any regular vocational training courses. The base there is unlike the others in that its purpose is to assist in settling Indians on the thinly populated plains. Owing to these special circumstances, there has been no need for the central workshop to extend its activities beyond the newly founded settlement. The first regular course, which was started in March 1961, is a two-year course in carpentry, and there are ten trainees.

In the Puno area there are three central workshops at which 152 Indians have been given training. In 1960 a survey was made of the employment of the 104 Indians who had attended courses up to the end of the previous year ; it showed that 63 of them were still working in occupations connected with the training they had received. Of these, 41 were working as wage earners while the other 22 were in business on their own account ; 37 were living on the High Plateau and 26 in the coastal towns. Furthermore, out of those who were not working in the trades they had learnt, five had also emigrated to the coast to look for work.

Of the 22 who were working on their own account, 16 were in ten village workshops which they had set up on their own initiative with help from the base. Of these, nine are carpenters' shops and one a metalworking shop (in the latter four men are working). In normal times the earnings of these artisans vary from 30 to 50 soles a day each. As a commercial sideline some of them sell groceries or wood. To give a complete picture of the results achieved in equipping service workshops in the Indian villages, it should be added that, in addition to these ten handicraft workshops, there are six village workshops in other parts of the region.

Apart from occasional aid given by the base, the ex-trainees from the central workshops have had to find jobs for themselves. The fact that 60 per cent. of them are in fact working in the trades they learned is evidence of their ingenuity and perseverance. In future, however, it is hoped that they will be helped by the employment offices of the National Employment Service.

At Guano short courses for village workshop demonstrators were held while the building intended for use as a central workshop was being modernised and the equipment installed. By the end of 1960, 78 Indians had been trained in five combined carpentry and metalworking courses. A further 20 were given practical and theoretical training in weaving, far more time being devoted to teaching new weaving methods than to the manual operation of the looms, with which the pupils were already quite familiar. Four village workshops were opened in the area, one of which ran very well for two years owing to the weaving demonstrator's enthusiasm and devotion. But as it was impossible to pay him properly, he finally had to give up and this virtually brought the workshop to a standstill. Because of the experience of these years, the Chimborazo base intends to concentrate on the establishment of handicraft workshops. In view of the unco-operative attitude of the villages in the area, it simply does not possess the staff or the money to be able to give its backing to communal workshops.

Situation regarding Local Personnel Attached to the Base Vocational Training Departments

In order to achieve the aims of the vocational training plan, experience shows that the following are essential :

(1) the appointment of a vocational training adviser to the national agency in charge of the programme for integrating the indigenous peoples ;

(2) a number of instructors in various subjects to teach at each central workshop, one of them to act as workshop manager, i.e. to supervise the workshop itself and the village workshops in addition to acting as adviser to the head of the base ;

(3) a number of village vocational training demonstrators capable of giving instruction in simple jobs involving the manufacture and repair of a variety of articles and equipment used at home or at work and of acting as links between the village workshops and the central workshop.

The position as regards each of these three classes of personnel is as follows. The duties of the general adviser have hitherto been discharged by I.L.O. experts. Owing to the limited budgets of the national agencies in charge of the programme in each of the countries concerned, it has not yet been possible to appoint a local official to take charge of vocational training at the national level. The further training facilities for instructors at the central workshops were described earlier. At present there are eight of these local instructors at the Puno base, two at Pillapi and Playa Verde and one at each of the other action bases in Bolivia and Ecuador. During 1961 it is hoped to appoint two additional instructors at Puno who can be assigned to the new central workshop at Taraco, and also to appoint a second local instructor at Guano. As for the village demonstrators, although a good many have been trained in the central workshops it has been found impossible to solve the problem of their remuneration either by obtaining contributions from the Indians who benefit from the activities of the village workshops or by paying them a wage out of the base's budget. It seems plain that the training of these demonstrators who can give elementary instruction to the Indians must be governed by the amount of money available for village workshops.

Current Problems Encountered in Carrying Out the Programme

It has been fairly difficult to relate the programme of the central workshops at all closely to the existing or foreseeable employment opportunities. In none of the three countries in question are any figures about the employment situation readily available. This makes it necessary to arrange for special surveys of the short-term employment position and of any new opportunities created in the future by national or regional economic development plans.

The vocational training activities of some bases have been hampered because of the inadequacy of the funds that their respective governments could afford to contribute. As the budget of each national programme does not make any special provision for vocational training it has often been difficult to plan ahead and to establish any criterion for sharing out the available money between the centralised activities of the base workshops and the decentralised activities which were to be carried on in the villages.

Some foreknowledge of the sums that each country can afford to set aside for vocational training is essential in deciding not only the relative importance of each of these two aspects of the programme but also the method of financing that should be adopted (within the limitations imposed by the budget) to develop the full potentialities of the central and village workshop systems. It is certain that, subject to special arrangements in each particular case, and leaving aside the possibility of a subsidy from taxation, an attempt could be made to make the workshops self-supporting on the basis of a carefully worked out plan combining the requirements of vocational training with those of production on a commercial basis.

The absence of a fixed budget has also hampered the development of the village workshops because it has been impossible to guarantee the incomes of the demonstrators in charge of them. Since the action bases themselves could not pay their wages out of their own budgets, it was hoped that the villages would be able to pay them, if not a fixed wage, at least some other form of remuneration, but this hope was disappointed.

Factors Impeding the Operation of the Village Workshops

The main factors which impede the operation of the village workshops in an area as poor as the Andean High Plateau are the poverty of the Indian peasants, the irregular supply of wood, iron and sheet metal, the shortage of tools and the lack of money.

The major factor—and the one most difficult to change—is the Indians' poverty. The very low incomes of wage earners and smallholders mean that the standard of equipment used in agriculture and the home is very primitive. Since the village workshops were established such absolute necessities as doors, windows and tables have been placed within the reach of the Indians, and those who were most anxious to better their lot have taken advantage of these opportunities. But the majority of them are still quite unable to improve their living standards to any marked degree, and progress all along the line must wait until there are new sources of income. Until this happens many of the village workshops will be condemned to stagnation.

Supply difficulties are serious because of the distance from the centres of production and the scantiness of the local market. The shortage of tools is directly due to the Indians' poverty (in the case of the village workshops) and to the meagre initial profits of handicraft workers who set up in business on their own account.

The lack of cash resources is a more serious obstacle which is also directly due to the low general level of incomes among the Indians. It affects the replacement and enlargement of the sets of tools in the workshops, the purchasing of raw materials and the manufacture of goods in anticipation of sales. The fact that the range of tools in the workshops cannot be improved is alarming because it is a sign of stagnation or regression. The failure of attempts to make articles in everyday use for stock rather than to order confines handicraft workers to jobbing. Now that many of them have decided to work full time in their new occupations, it would be advisable to find ways and means of helping them to manufacture at least some articles for stock so as to avoid dips in output caused by a falling off in orders.

The action bases have tried to overcome these difficulties, but their efforts have been circumscribed by the inadequacy of their resources. The vocational training departments face the major task of organising new supplementary courses for village demonstrators and handicraft workers, increasing the technical advice available to those working in the village workshops and designing prototypes of articles that could be manufactured in them. However, the worst obstacle to the achievement of prosperity by these village workshops is the poverty of the Indians themselves. It follows that until substantial progress in farming efficiency in the region—reflected in a marked increase in the peasants' incomes—has been achieved, it is unreasonable to expect that the village workshops already in existence will be used much more extensively than they are now.

Future Prospects for Vocational Training and the Encouragement of Handicrafts under the Andean Indian Programme

The fundamental problem facing the Andean Indian Programme in this respect is to find out what financial help each country's department in charge of the integration of the Indian population can afford to give to the central workshops and the scheme for giving aid to the villages. If there were a regular budgetary allocation for vocational training it would be possible to go ahead with the task of giving further training to the local staff already employed at the bases. Any new staff that may be needed to cope with the additional work caused by expansion of the existing programme can easily be selected from among individuals who have qualified at the technical schools of their respective countries, or from among foremen, skilled workers and handicraft workers with experience in metalworking or carpentry.

Irrespective of the theoretical and practical training already received by the candidates selected for posts as vocational training instructors under the Andean Indian Programme, they will need further instruction and guidance on the job to fit them for their new duties in the villages. In addition to the revision or streamlining of the theoretical and practical instruction in wood and metalworking subjects, this will certainly require an introduction to teaching methods and sociology as applied to vocational training problems within the special social and economic context of the Indian peoples.

The provision of standard and further training to new teaching staff in a much more thorough and effective manner than hitherto will be possible in Peru once the National Instructors' Training Centre is opened in the early part of 1962. This centre is being established by the Peruvian Government at Hauncayo with financial help from the United Nations Special Fund and technical assistance from the I.L.O. It will be able to give training to pupils from other Andean countries in addition to meeting the demand for trained personnel in Peru, and fellowship programmes for this purpose will be organised in due course. In addition, it will possess a standards and methods department and a teaching equipment department ; the latter will produce supplies for the instructors at all the action bases.

Meanwhile a new training centre is to be established in Bolivia in co-operation with Cochabamba University which, in addition to its regular courses, will hold special further training courses for local instructors on the staff of the action bases in Bolivia. For its part, the Guano centre, as soon as it has overcome the difficulties that have prevented it from operating at full capacity, will hold similar training courses for local vocational training staff at the action bases in Ecuador.

Naturally, personnel needs will depend on the relative importance attached at each base to the operation of central workshops and the encouragement of village workshops. As it seems highly unlikely that budgetary allocations for these purposes will be increased, it can be assumed that any future training will have to be continued at the present rate, every possible effort being made, at the same time, to ensure that the central workshops pay all, or at least part, of their way, and to set the village workshops on a sound economic footing.

Consequently, where it is not essential to train any additional Indians, the central workshops will confine their training activities to raising the standards of skill of those who are already using the village workshops.

On the technical and production sides the central workshops will concentrate on helping the existing handicraft workers to stand on their own feet. To this end they will concert their production plans with those of the handicraft workers so as not to deprive them of orders, conduct research into manufacturing methods which can eventually be taken over by handicraft workers, and organise exhibitions and sales of articles manufactured by them, together with any other forms of promotion calculated to broaden the market and foster new economic relationships.

The extension of vocational training facilities and the work of encouraging handicrafts will only be possible if two conditions are fulfilled, viz. greater budgetary allocations to the bases for this purpose, and the raising of levels of income among the Indians—largely through better and more intensive farming.

Meanwhile, the most appropriate course would appear to be to continue working in depth within the limits that have been reached with a view to establishing the central and village workshops in each region on a sound economic basis. In this way the initial introductory period, during which educational considerations come before economic factors, will be followed by a period of consolidation during which the order of priority will be reversed. But, despite the greater emphasis that will be laid in future on economic objectives, these groups of workshops will continue indirectly to have a beneficial effect on the level of education and skill of the Indian population.

Conclusion

The tangible achievement of the vocational training scheme launched by the Andean Indian Programme has been the establishment of village workshops linked with central workshops in a number of areas on the High Plateau. These enterprises, which were a complete innovation in the area, have undoubted value in promoting economic progress among the Indians and also do a great deal to improve their general education and technical skills.

The experience gained shows that in a poor rural environment vocational training must be planned with an eye to two things—education and economic success—and must be based on a central workshop which, in addition to acting as a training institution, gives technical support to schemes in the villages within a certain radius.

Establishing and running the central workshop raises problems of construction, equipment and staffing, but these can readily be overcome when sufficient money is available. The methods used by the Andean Indian Programme for the initial, further and special training of instructors have proved their worth.

If the decentralised approach is to be effective three conditions must be fulfilled : interest must be shown by the Indian villagers ; there must be suitable facilities (a village or handicraft workshop with appropriate equipment) ; and there must be a technically qualified person to act as a link with the central workshop. To keep a village workshop running, a full-time demonstrator is needed—and he must be paid. The difficulty is not so acute when a handicraft worker takes over the workshop, but even then it is necessary to have a technically qualified person to act as a link with the central workshop.

The communally run village workshop appears to be suited to the culturally less advanced communities where the traditional collectivist relationships and institutions survive, internal cohesion is still great

and there is a subsistence economy without occupational specialisation of any kind. On the other hand, the handicraft workshop is a natural choice for the more advanced villages where, side by side with forms of subsistence economy, there are methods of production based on occupational specialisation and cash exchange—as is common in the case of non-traditional handicraft trades such as carpentry and metalworking.

The launching of a programme such as the one described requires fairly substantial funds. As the developing countries have only limited resources, the initial period should be followed by a spell of consolidation during which every effort must be made to make the scheme pay its way. During the initial period, priority must go to educational considerations ; at the same time the greatest possible use must be made of the region's resources and economic opportunities. During the second period, however, priority must be given to economic factors, i.e. the central workshop, while continuing to give vocational training as a sideline, should concentrate on the production, supply and marketing problems which must be overcome if the village workshops are to continue as going concerns.

From the economic standpoint, vocational training is no more than an instrument and it only becomes fully effective when the economic development of an area puts more money into the hands of its people, thus enabling them to satisfy new needs. However, even though only an instrument, vocational training can help to raise the incomes of the inhabitants of a rural area, provided it is dovetailed into the general development programme, particularly the part of it dealing with agriculture. One example of the way it could help would be by teaching techniques for making better farm implements.

Lastly, it must be pointed out that final success does not depend entirely on the skill and energy with which vocational training is carried out or handicrafts are encouraged. It depends largely upon the raising of living standards among the rural population, and this can only be done through greater efficiency in farming, on which their economy is based.