

CREATING EMPLOYMENT THROUGH THE LABOUR-INTENSIVE PUBLIC WORKS PROGRAMMES: THE INDONESIAN EXPERIENCE

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To correct the employment gap and the uneven distribution of the population and labour force, the Indonesian government undertook a direct intervention program in employment creation through public works and this has become the largest nationwide effort that has been done anywhere in the world, except China. This paper will describe and assess the achievement of this employment policy over the period 1969-1984. The programmes could be considered as successful whether in terms of the impact to the local economy (which was substantial) or in terms of direct employment creation (which activated about one-third of the underutilized labour force). In conclusion, the paper contends that relying on these labor-intensive public works programmes, which can be further expanded, cannot solve the employment problem; rather, a broader employment policy is needed.

With an annual growth-rate of 2.3 per cent during the seventies, Indonesia's population reached an estimated 158 million in 1983, bringing with it the critical problem of creating employment for the growing labour force. Almost half of the annual increase in population of 3 million have entered the labour force. However, although the open unemployment rate seems to be rather low¹ — less than 2 per cent — more than half of the labour force or about 0.65 million persons could be considered as underutilized.² By assuming 100 working days yearly, the total annual underutilization of labour came to about 195 million man-days.

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¹A person was considered working if "... during the previous week [he] performed an activity for pay or profit, and the duration of this activity was at least one hour per day", with some exceptions such as those on leave, ill, etc. or those who have a permanent job or waiting for the harvest time for farmers, etc. Based on this consideration, a person was looking for work if he worked less than one hour per day in the previous week. See Central Bureau of Statistics, *Population of Indonesia: Results of the 1980 Population Census* (Jakarta: 1983) Series, No. 2.

²Underutilization of labour was calculated on the basis of working less than 35 hours per week and the willingness to do additional work. See Hendra Esmara (1983).

The problem became more severe due to the uneven distribution of the population and labour force. Almost 65 per cent of the population lived in Java which covered about 7 per cent of the total land area of Indonesia. Java, which used to have an average of more than 700 persons per square kilometre, has become the most densely populated area in the world. On the other hand, the average population density of Indonesia was 84 persons per square kilometre.

Several efforts have been made to correct the employment gap and the uneven distribution of the population and labour force. In fact, the direct central governmental intervention in employment creation through the labour-intensive public works programmes in Indonesia has become the largest nationwide effort that has been done anywhere in the world — except China (Patten, Dapice and Falcon, 1980, p. 155). The program was known as the *Inpres Tingkat II* or the Presidential Instruction for the Second Governmental Level — hereinafter referred to as *Inpres II*.³ In addition to the *Inpres II*, other complementary employment-creating activities from the central government are the *Padat Karya* Program (labour-intensive works program), Replanting and Afforestation, and the *Kabupaten Supporting Roads* Programmes.

This paper will describe and assess the achievement of the direct governmental public work job-creating policy over the period 1969-1984. This policy was one of the four-pronged employment policies of Indonesia which include the indirect employment policies covering the general macroeconomic employment policy, the sectoral and the regional employment policies (Fourth Five-Year Development Plan, 1984-1989).

Employment at the Local Levels: Four Interrelated Public Works Programmes

The unskilled labour — defined as having the education of primary school and below — which usually comprise about 88 per cent of the total labour force in Indonesia seemed to be lagging behind the high economic growth of more than 7 per cent during the seventies. The proportion of the labour force entering the wage economy — approximately about one-third of the total — did not change very

³Indonesia has a multi-level governmental system below the central government, i.e., province, municipality and *kabupaten* (district), *kecamatan* (sub-district) and village. The provincial government was known also as the First-Level Governmental Region while the municipality and *kabupaten* were the Second-Level Governmental Region. The *Inpres II* programmes were the direct central governmental intervention to the Second Governmental Level, bypassing the provincial government, on the strength of the Instruction of the President of the Republic of Indonesia.

much during the period. The other two-thirds are still working in the informal sector -- mostly in the overcrowded agricultural activities.

Although the borderline between "working" and "looking for work" seems to be very vague, however, almost half of the labour force could be considered as underutilized. The underutilization of labour, as expected, mostly occurred in the informal-rural-agricultural sector. Unfortunately, the excess capacity of labour in the rural areas was mostly used in the *gotong royong* efforts -- a non-wage activity for rehabilitating the rural infrastructures by using a rather primitive way of working.

The roots of the *gotong royong* originated in the traditional mutual self-help of the community, particularly among the clans. The concept, however, has been expanded to cover the work for the whole community. Deviation from the regular work in the agricultural land is usually done during the slack seasons. Employment in this sense has been achieved without increasing the income of the community. Lewis' concept of the unlimited supply of labour seems to be quite valid. However, Lewis noted that ". . . the price of labour, in these economies, is a wage at the subsistence level" (1958, p. 403). The *gotong royong* concept did not even consider the subsistence wage level but assumed the price of labour to be zero.

In the village community, self-help seems to be a way of life of the people. Social participation became the main strength of the village development. But the community applied an unwritten sanction to anyone who did not join the *gotong royong* activities.

The *gotong royong* ideas dominated most of the thinking of creating employment in Indonesia during the sixties. The ideas have been taken over by the government in a more formal way by creating the *Padat Karya* Program in 1963. The workers in the program were given the *bulgur*, cracked wheat, through the American food-aid program as compensation for their work. In this sense, the *Padat Karya* Program was an improvement over the *gotong royong* concept although the compensation given was still below the subsistence level. The program worked because the opportunity for higher compensation was not available.

The *Padat Karya* Program tried to use the unemployed rural population in the densely populated areas of Java and Bali, particularly, in the *kecamatan*s which lacked food supply and infrastructures. The main activity of the *Padat Karya* Program was to improve the infrastructure condition of the areas, such as rehabilitating the village roads, small dams and irrigations, etc.

The *gotong royong* activities of the *Padat Karya* Program were focused mainly on selected undeveloped and backward *kecamatan*s. With the introduction of the First-Five Year Development Plan 1969/60-1973/74, the traditional *gotong royong* activities have been modified and used on a nationwide basis for improving the village infrastructure. Modification has been made by giving to the village a lump-sum subsidy for buying the necessary construction materials. However, the labour should be provided by the village on a *gotong royong* basis. This program which began in 1969/70 was known later on as the Village Development Subsidy Program. Nevertheless, the *Padat Karya* Program was still maintained by the Government.

The lump-sum subsidy was given on an equal basis for every village — which began with Rp 100,000 per village in 1969/70 to Rp 1,250,000 in 1983/84. However, since 1980, a part of the lump-sum subsidy was required to be given to the women programmes of the *Pembinaan Kesejahteraan Keluarga* or Family Welfare Program in the village. The response to the village subsidy seems to be encouraging — particularly at the beginning of the program. The counterpart funds from the village, mostly in terms of labour and construction materials, already surpassed the central government subsidy.

The central government's direct intervention in the village intended not only to exploit the *gotong royong* spirit of the rural, and to a certain extent, the urban community, but also to monetize the rural village economy. The uses of money in the remote rural villages seem to be less than in the urban areas. Barter still plays an important role in these villages. By giving the subsidy, the money will be channeled directly to the village. The central government has become the catalyst in speeding up the process of village development.

The policy of giving equal subsidy to each village has been chosen due to its simple way of allocating the funds. The total village subsidy received by a provincial government depended on the number of villages. In order to increase the total subsidies, most of the provincial governments tried to increase the number of the villages in their respective province by splitting the old villages into new ones. Since the village subsidy was meant to stimulate and monetize the village economy, the central government encouraged the provincial government to increase the number of their villages. It was not surprising that the number of villages increased dramatically from 45,303 to 66,437 over the period 1969-1984.

The criteria of the success of the village subsidy depended not only on the completion of the projects but also on the ability of the

community to provide the counterpart funds. Nevertheless, creating employment — through the *gotong royong* efforts — without increasing the income of the labour could not really increase the welfare of the community. It was argued, though, that the community could be benefited by the improved infrastructure brought about by the *gotong royong* efforts. However, the benefits usually went to the landlords and the rich, not to the poor, landless people of the village. In the meantime, the voluntary labour in the *gotong royong* framework, to a certain extent, had been changed into forced labour.

The income approach to the employment expansion has been formulated, later on, in addition to the *gotong royong* system. The income approach introduced the wage system into the employment creating programmes of the public works. The responsibility for implementing this system was given to the Second-Level Governmental Regions — municipalities and *kabupatens* — in accordance with the principles of the Regional Government Law which gave the power to the Second Level Government to become *autonomous* regions. On this basis, the President of the Republic of Indonesia issued an instruction in 1970 to give the funds directly to the Second Level Government, bypassing the Provincial Government, for rehabilitation and construction of the local infrastructures through the wage system. This became the Inpres II Program.

The direct central governmental intervention for creating employment at the local level was taken due to the huge employment problems facing Indonesia. Several alternatives were considered as the criteria for allocating the funds to the second-level regions. These alternatives were: (1) equal lump-sum contribution, (2) the contribution to depend on the size of the labour force of the region, (3) the contribution to be based on the total area of the region, and (4) a combination of these criteria.

Since the main objective of the Inpres II Program was to create employment opportunities at the local level, then the size of the labour force should become the dominant criterion. But considering the scarcity of the labour force statistics, the indicator for estimating the number of the labour force, logically, should be the population of the region.

The funds contributed by the central to the Second-Level Governments were then calculated on a *per capita* basis. When the Inpres II Program was first introduced in 1970, the per capita contribution was Rp 50 and later on was increased tremendously until it became Rp 1,250 in 1983/84. However, one of the main weaknesses of the allocation criterion was the unequal population size of second-level regions. The disparity was so great that some small municipalities and *kabupatens* received barely enough funds to finance an

infrastructure project.

The problem of the small regions was solved by exempting them from the general rules of the Inpres II Program. The *per capita* criterion was not applied to them; instead the minimum funds were provided these regions. The minimum funds allocated to the second-level regions increased also from Rp 5 million to Rp 160 million over the period 1970/71 to 1983/84. The number of second-level regions receiving the minimum funds was 61 out of 300 regions.

The central government's direct contribution to the local governments may weaken the ability of the local governments to increase their own local revenues the sources of which are smaller than the central government contribution. Since it was not the intention of the central government to kill the initiatives of the local governments, an incentive factor was included in the central government's allocation criteria.

One of the main sources of the local revenues was the *Iuran Pembangunan Daerah* (Ipeda) or the land tax. A certain annual target of *Ipeda* was set up for every second-level region. Additional funds were given to the regions which surpassed the targetted *Ipeda* revenues. The additional funds became the incentive for the local governments to increase their own revenues.

Productive employment was generated through the Inpres II Program which tried to improve: (1) transportation through physical infrastructures, such as roads and bridges; (2) production through the construction of irrigation, dams, canals, etc; (3) environmental conditions with the rehabilitation and construction of sewers, rural roads, kampong improvement programs, etc; and (4) public service with the building of marketplaces, bus terminals, small river harbours, etc.

Although the Inpres II Program was aimed at increasing employment opportunities at the local level, some other complementary measures were taken to maximize the use of the unemployed and the underemployed. In the poor and backward *kecamatan*s, the *Padat Karya* Program was incorporated to the *New Padat Karya* Program — by changing the *bulgur* into a minimum wage. This wage in the *New Padat Karya* Program was however lower than that of the Inpres II Program. Nevertheless, the *New Padat Karya* Program existed alongside the Inpres II Program since the excess capacity of labour could not be absorbed by the higher wage activities. The segmented price of labour could not be avoided.

Although the *Padat Karya* Program was originally limited to the rural infrastructure projects, the *New Padat Karya* Program was expanded to include the urban areas. The program focused on the poor and backward *kecamatan*s. The *New Padat Karya* Program was used also, since 1976/77, to assist in the rehabilitation of disaster areas damaged by floods or drought. And two years later, the activities of the program were expanded again to include the construction of the tertial and quarterial irrigation cannals in 120 irrigated areas spread over 473 *kecamatan*s.

The program was thus implemented on practically a nationwide scale since nearly all provinces have their own pockets of poor and backward *kecamatan*s. The workers needed for this program were recruited from the huge reserve army of labour force available in the rural areas, particularly in Java. The *New Padat Karya* Program, as in the old one, thus combined the traditional *gotong royong* system and the semi-modern minimum wage payments.

The Inpres II Program, while trying to create employment opportunities in the densely populated small areas (mostly in Java), neglected the potential sparsely populated large areas (outside Java). It was argued that the rural infrastructures to be rehabilitated in the large areas would take a longer time than those in the small areas. At least, the allocation criteria for the Inpres II Program should be a combination of the number of population and the size of the areas (Esmara, 1970).

However, instead of changing the Inpres II Program allocation criteria, a new program – the *Kabupaten* Supporting Road Program – was created in 1979/80 to overcome the problems of the sparsely populated large areas. The main objective of the program was to open the isolated areas by rehabilitating and constructing the supporting minor roads and bridges. The *Kabupaten* Supporting Road Program became the counterpart of the Inpres II Program, although it was not as large as the latter.

Although the *New Padat Karya* Program has taken care of the poor and backward *kecamatan*s, the critical and barren areas in Indonesia could not be neglected. Since these comprised about 15 million hectares, it was perceived that the problem would become more severe if nothing were done to these areas.

In 1976, a new program, the Replanting and Afforestation Program, was created to generate employment opportunities in the critical and barren areas of the country. This program could be considered as the counterpart of the *New Padat Karya* Program.

The four labour-intensive public work programmes — the *New Padat Karya*, the Inpres II, the *Kabupaten* Supporting Road, and the Replanting and Afforestation, Programmes — became the central government's direct intervention for creating employment at the local levels. Although the village development subsidy program could also generate employment at the village level, the workers did not receive any compensation for their work. The *gotong royong* system became the non-wage employment creation activity in the village.⁴

Labour Intensive Public Works Programmes: An Evaluation

The main objective of the labour-intensive public works programmes was to improve the supporting infrastructural networks of the country through labour-intensive techniques — in the sense that at least two-thirds of the total costs of the project should be in the form of wages and salaries. This criterion has been fulfilled either by the *New Padat Karya* Program or by the Inpres II Program. The *Kabupaten* Supporting Road Program and the Replanting and Afforestation Program are less labour-intensive than the first two programmes.

In evaluating the success of labour-intensive public works programmes, two criteria became the yardsticks, namely: (1) the impact of the improvement of the infrastructures to the local economy, and (2) the extent of the employment creation due to the activities of the public works programmes. Both criteria reflect the output of the programmes. However, it is necessary to look carefully at the costs of the programmes to the government budget. With the decreasing sources of government revenues from the oil sector (Esmara, 1983), all public works programmes should be carefully evaluated against the objective of the programmes.

Funding the Public Works Programmes

The Inpres II Program absorbed most of the budget of the labour-intensive public works programmes in Indonesia during the period 1969-1984 as reflected in Table 1. Out of the total cumulative fifteen-year realized budget of the labour-intensive public works programmes of Rp 1,870 billion, about 59 per cent was used for the Inpres II Program. This nationwide multi-purpose program was enthusiastically received by the municipalities and *kabupatens*. With limited local sources of revenues, the sudden inflow of Inpres II

⁴For a more detailed description of all Inpres Programmes, see Esmara (1983).

Year	Padat Karya Program			Inpres II Program			Replanting and Afforestation	Kabupaten Supporting Road Program	Total ^a	National Development Expenditures	Employment Development Expenditures Ratio (%)
	(Rpmillion)	(Rp)	per Capita Contribution	Minimum Contribution	Total Contribution	(Rp billion)					
1969/70	129.6	—	—	—	—	—	—	—	118.2	0.1	0.1
1970/71	149.6	50	5.0	5.6	5.6	—	—	—	169.6	5.7	3.4
1971/72	280.0	75	7.5	8.8	8.8	—	—	—	195.9	9.1	4.6
1972/73	800.0	100	10.0	12.8	12.8	—	—	—	298.2	13.6	4.6
1973/74	750.0	150	15.0	19.2	19.2	—	—	—	450.9	19.9	4.4
1974/75	1,100.0	300	16.0	42.5	42.5	—	—	—	961.8	43.6	4.5
1975/76	1,600.0	400	20.0	59.1	59.1	—	—	—	1,397.7	60.7	4.3
1976/77	5,900.0	400	30.0	62.4	62.4	16.0	—	—	2,054.5	84.3	4.1
1977/78	10,800.0	450	40.0	69.1	69.1	24.5	—	—	2,156.8	104.4	4.8
1978/79	11,000.0	450	50.0	70.9	70.9	36.0	—	—	2,555.6	117.9	4.6
1979/80	14,600.0	550	65.0	87.1	87.1	40.8	13.0	13.0	4,014.2	155.5	3.9
1980/81	20,800.0	750	100.0	119.4	119.4	48.6	26.0	26.0	5,916.1	214.8	3.6
1981/82	21,500.0	1,000	150.0	162.7	162.7	70.4	55.0	55.0	6,940.1	309.6	4.5
1982/83	33,600.0	1,000	160.0	193.9	193.9	49.4	83.6	83.6	7,359.6	360.5	4.9
1983/84	32,600.0	1,250	160.0	194.1	194.1	59.4	84.4	84.4	9,899.2	370.5	3.7

^aTotal government expenditures on labour-intensive public works programmes: *Padat Karya*, *Inpres II*, *Replanting and Afforestation*, and *Kabupaten Supporting Road Programmes*.

Sources: Compiled from *Lampiran Pidato Kenegaraan Presiden Republik Indonesia* (Appendix to the State Address of the President of the Republic of Indonesia) — various issues; Central Bureau of Statistics, *Monthly Statistical Bulletin* — various issues, and the Ministry of Manpower.

funds throughout the country has increased the capacity of the second-level regions to improve the conditions of the badly needed local infrastructures.

The equity principle underlying the Inpres II Program gave a psychological boost to the local governments and the local people. The local governments regarded the Inpres II Program as a "short cut" approach to local development. Since not all large development projects could be spread throughout the country, than the small Inpres II projects became the symbol of development at the local levels. Psychologically, the activities of the Inpres II Program attracted the local people into the mainstream of development. Without the Inpres II Program, nothing would have happened at the local level — particularly in the remote areas.

The response to the Inpres II Program has encouraged the central government to increase the *per capita* and the minimum contributions to the local governments. Although the local governments received a growing sum of Inpres II funds, they did not neglect the efforts to collect their own local revenues, especially the *Ipeda* tax. An increasing revenue of the *Ipeda* tax, in the sense of surpassing the *Ipeda* target, has been rewarded by the central government by giving incentive funds in the framework of the Inpres II Program. In the last 14 years, the number of local governments receiving the incentive funds increased from 130 to 220. Due to these trends, it was not surprising that the central government's contribution to the Inpres II Program increased continuously over the last 14 years at an average rate of 29 per cent annually.

The increase in funds for the labour-intensive public works programmes made possible improvement in the quality of the infrastructure. The improvements were made through provision of heavy duty equipment, such as road rollers, stone crushers, motor vehicles, etc. About 3,500 units of such equipment have been provided the 300 municipalities and *kabupatens*. With these equipment, the use of manpower could be optimized. Most of the construction materials, such as stones, rocks, etc. were available at the local level.

In the meantime, the central government allocated about 5 per cent of the Inpres II funds for planning the project designs at the local governments. Thus, the total cost per project of the Inpres II Program has been increased from Rp 3.2 million in 1970/71 to Rp 44.9 million in 1983/84. Although the quality of the infrastructure was being improved, most of the projects lasted less than two years. It was not surprising that the same projects could be rehabilitated more than once.

Although the *Padat Karya* Program was implemented earlier than the Inpres II Program, its funds were not as much as the latter's allocation. Also, its expanded form did not conflict with the Inpres II Program because it had a narrower scope. At the beginning of the program, the subsistence compensation for work was given in kind, the *bulgur*. Since 1974/75 however, the minimum wage payments were given to the workers. The minimum daily wage increased from Rp 35 to Rp 800 over the period 1972-84. However, it was roughly about 50 to 60 per cent only of the local ordinary wage paid to the Inpres II Program. The funds allocated for the *New Padat Karya* Program were fully borne by the central government.

Quite different from the *New Padat Karya* and the Inpres II Programmes, the Replanting and Afforestation, and the *Kabupaten* Supporting Road Programmes were introduced just recently. However, the employment components of both programmes were not as high as the former programmes. The World Bank and the Asian Development Bank fully support the programmes particularly the *Kabupaten* Supporting Road Program. In the last two years, 1982-84, the World Bank gave a total loan of Rp 6 billion for the road program while the Asian Development Bank, about Rp 1.8 billion.

Funding for labour-intensive public works programmes increased tremendously in the last 15 years, due to the increased budget for the respective programs and the addition of new programmes. Both trends dramatically increased the Employment-Development Expenditures Ratio (EDER) from 0.1 per cent to nearly 5 per cent in the last fifteen years. In other words, the relative share of the central government's development expenditures allocated for the direct labour-intensive public works programmes has increased over the period 1969-84.

In addition to this direct cost, the government also provided a large amount of indirect funds for organizing the programmes either at the central or at the local governmental levels. With the increasing funds, particularly for the Inpres II Program, a large reorganization of local administration could not be avoided. A new local planning agency has been set up at the local government — *Bappeda Tingkat II* — as the counterpart for the provincial planning agency. Physical planners played an important role in designing the infrastructural rehabilitation and construction in the areas.

Nationwide efforts have been conducted by the Ministry of Home Affairs to train the local planners in Indonesia. It was estimated that the local governments — municipalities and *kabupatens* — needed about 3,000 planners with several specialties. However, at

that time only 20 per cent of the demand could be fulfilled. Planning from below thus started to roll.

In the large-scale efforts to train the local planners, the Indonesian government closely worked with the United States Agency for International Development (USAID). Several planning training centres were planned to be established throughout the country. In the meantime, the Ministry of Home Affairs trained the local planners at several universities in Indonesia.

Unlike the Inpres II Program, the *New Padat Karya* Program was administered by the Ministry of Manpower. It also provided the provincial manpower offices with heavy equipment and training facilities. However, the program was not as large as the Ministry of Home Affairs' Inpres II Program.

Although the training of planners has been going on in the last few years, the lack of skilled manpower at the local governments was still being felt. With the limited skilled manpower, the absorptive capacity of the local governments to use the sudden inflows of the central government funds was also limited. Due to this situation, it was estimated that 30 per cent of the Inpres funds could not be used by the local governments.

Physical Performance of the Labour-Intensive Public Works Programmes

It is rather difficult to evaluate the physical performance of the labour-intensive public works programmes and its impact upon the local economy. First, the labour-intensive public works projects were small — with the average length of road per project less than 7 kilometres and bridges not more than 40 metres, mostly less than 10 metres — and spread throughout the country, over an area of 1.9 million square kilometres. The definition of a project was also very vague — particularly in a road project. The weight between a rehabilitation and a new construction project made the problems more complicated. A small bus terminal, for example, could not be separated from medium ones. The same situation occurred also in the rehabilitation and construction of bridges, irrigation, dikes, sewer, etc. In addition to the definitional problem, the reporting system was still weak despite the improvements in the transportation and communication system of Indonesia. (See Table 2.)

Second, the quality of the infrastructures sharply differed from one project to another — and this is not reflected in the quantity of the projects. Almost all of these projects were of a supporting nature and it was not the intention of the government to achieve

Table 2 — Inpres II and Kabupaten Supporting Road Programmes in Indonesia:
Number of Projects, 1970/71-1983/84

Year	Inpres II Program					Kabupaten Supporting Road Program ^b	
	Roads	Bridges	Irrigation	Others ^a	Total	Road Program ^b	Total
1970/71	n. a	n.a	n.a	n.a	1,763	—	1,763
1971/72	774	791	432	396	2,393	—	2,393
1972/73	937	819	491	581	2,828	—	2,828
1973/74	1,057	759	526	457	2,799	—	2,799
1974/75	1,744	913	814	537	4,008	—	4,008
1975/76	1,987	853	666	789	4,295	—	4,295
1976/77	1,958	693	496	637	3,784	—	3,784
1977/78	1,787	520	425	442	3,174	—	3,174
1978/79	1,947	532	391	380	3,250	—	3,250
1979/80	2,091	510	431	395	3,427	117	3,544
1980/81	2,341	630	419	460	3,850	301	4,151
1981/82	2,737	689	422	559	4,407	725	5,132
1982/83	2,804	652	408	813	4,677	857	5,534
1983/84	2,673	563	341	748	4,325	858	5,183

^a Fences, sewers, flood control, etc.

^b Roads, bridges, workshops, and training.

Sources: Compiled from *Lampiran Pidato Kenegaraan Presiden Republik Indonesia* (Appendix to the State Address of the President of the Republic of Indonesia) — various issues.

superior quality infrastructure through these programmes.

Third, it is almost impossible to evaluate the impact of the labour-intensive public works programmes upon the local economy. The development of the local economy was the result of an interaction of several programmes implemented in the local areas. Separating the labour-intensive public works programmes from other activities and tracing its impact upon the local economy was not the best approach to evaluate the programmes. Since the quantitative approach to the study of the impacts of the programmes upon the local economy could not be done, then the qualitative approach seems to be the best choice.

Rehabilitation and construction of the road networks have been given the highest priority in the labour-intensive public works programmes. Over the period 1969-84 about 181,158 kilometres of road have been improved through these programmes. By comparing with the total length of the local roads of 109,142 kilometres, it could be concluded that some of the roads have been rehabilitated

Table 3 — Specific Labour-Intensive Public Works Programmes in Indonesia: Physical Performance, 1969/70-1983/84

Year	Roads (km)		Bridges (m)		Irrigation (ha)		Tertial Irrigation Canals ^b (km)	Workshop ^c (Units)	Replanting and Afforestation Areas (ha)
	Padat Karya Program	Inpres II Program	Kabupaten Supporting Road Program	Inpres II Program	Padat Karya Program ^a	Inpres II Program			
1969/70	106	—	—	—	1,000	—	600	—	—
1970/71	311	3,016	3,327	12,259	1,400	57,808	1,040	—	—
1971/72	621	3,748	4,369	15,330	2,073	114,828	1,584	—	—
1972/73	700	4,08	5,108	18,734	7,027	95,602	1,358	—	—
1973/74	102	5,220	5,322	20,920	1,470	128,915	1,150	—	—
1974/75 ^d	415	6,848	7,263	22,037	1,358	128,243	498	—	—
1975/76	713	6,089	6,802	18,285	1,196	156,918	497	—	—
1976/77	1,108	7,186	8,294	21,773	3,431 ^e	82,759	1,388	—	465,115
1977/78	2,547 ^f	7,314	9,861	18,845	870	112,004	3,320 ^g	—	835,784
1978/79	2,031	8,036	10,067	22,040	245	112,394	7,915	—	833,984
1979/19	1,971	10,322	14,381	16,602	—	72,732	8,632	—	779,448
1980/81	2,557	14,577	21,494	22,090	30	64,930	15,007	—	690,497
1981/82	2,910	15,951	11,466	30,327	15	91,678	6,238	—	291,157
1982/83	3,578	14,901	7,559	22,881	272	49,654	5,912	36	498,173
1983/84	3,466	17,579	7,414	22,812	369	44,316	3,822	14	796,330

^a Consisted of new rice-fields, replanting, terracing, etc.

^b Through the *Padat Karya* Program.

^c Through the *Kabupaten* Supporting Road Program.

^d Since 1974/75 has been expanded into the *New Padat Karya* Program.

^e Including 2,525 ha of improving the damaged rice-fields due to the severe dry seasons.

^f Including 990 km of improving the damaged tertial irrigation canals due to the severe dry seasons.

^g Including 2,678 km of improving the damaged tertial irrigation canals due to the severe dry seasons.

several times, either due to the temporary nature of the first rehabilitation program or to the damage brought by natural disasters in some parts of the country. About 69 per cent of the local road improvements were conducted through the Inpres II Program. (Table 3).

The Inpres II road networks have already connected the rural densely populated areas to the main road trunks and were later on supported by the *Kabupaten* Supporting Road Programmes. The small bridges along the roads have been rehabilitated in addition to the new ones built — more than 10,000 small bridges with the total length of approximately 338 kilometres over the period 1969-84. The large-scale magnitude of rehabilitating and constructing the semi-permanent road networks and small bridges all over the country improved the condition of the local economy tremendously. The agricultural commodity flows could be increased from the production to the consumption centres. At least, one of the bottlenecks of the Indonesia economy has been overcome. The high Indonesian rate of economic growth during the seventies — more than 7 per cent annually — could be attributed to the improvement of the transportation networks.

Construction of tertiary irrigation canals played a significant role in increasing the rice production of the country. Except for shortages due to some natural disasters, and the long drought, the production of rice in Indonesia seems to be sufficient for domestic consumption. Over the fifteen-year period, approximately about 60,000 kilometres of tertiary irrigation canals have been built through the *New Padat Karya* Program. About 1.5 million hectares of new irrigated fields have been opened by at least 8,000 small irrigation projects, mostly through the Inpres II Program and to a lesser extent through the *New Padat Karya* Program.

Rural transportation and production physical infrastructures became the main components of the labour-intensive public works programmes. The two related components became the supporting elements for the optimal use of the other capital-intensive high-quality infrastructures, either financed by the international institutions or through the government budget. Although the labour-intensive public works programmes mostly consisted of small projects, scattered throughout the country, it was crucial to development in Indonesia. The equity principle underlying the programmes supports the growth-oriented capital-intensive projects in the country. The two aspects of growth and equity, at the micro level, co-existed.

The emphasis of the urban labour-intensive public works programmes was different from the rural ones' due to the different needs

of the urban areas. The improvement of the living condition in the urban areas was given the highest priority, particularly in the Inpres II Program. During the period 1969-84, it has been estimated that there were nearly 7,200 kampong improvement projects, involving the building of fences, sewers, flood control, marketplaces, bus terminals, small river harbours, etc.

The *New Padat Karya* Program has been extended, covering at least 1,084 *kecamatan*s, or about 32 per cent of the total *kecamatan*s in Indonesia, in 1983/84. The projects under this program were simpler than those under the Inpres II or *Kabupaten* Supporting Road Programmes. As a combination of the traditional *gotong royong* and the semi-modern subsistence minimum wage payments, the program was mostly conducted through the mass mobilization of labour.

Although their project life is shorter than the Inpres II Program, the *New Padat Karya* projects are of an emergency nature. They need to be followed up by the other programmes, such as the Inpres II or the *Kabupaten* Supporting Road Programmes. Nevertheless, the impact of the *New Padat Karya* Program upon the local economy was substantial. As an emergency program, it helped ease an infrastructural bottleneck in such a short time by mass mobilization of labour.

The Replanting and Afforestation Program has a long-term impact compared with the other labour-intensive public works programmes. It has a dual objective of replanting the already exploited forests and improving the condition of the barren land. Most of the program costs go to the planting of young pine trees in the rural areas. Since the program began in 1976, the government has spent about Rp 345.1 billion to plant a total area of 5.2 million hectares throughout the country. In the last eight years, the average costs of planting per hectare of pine trees nearly tripled.

Since the replanting and afforestation program was conducted in the remote forested and barren areas, it was very difficult indeed to control the implementation of the program. It was not surprising that some of the funds were misused during the implementation stage. In addition, the careless recordkeeping during the planting stage has widened the gap between the reported planting areas with the actual ones. Although it was difficult to calculate the actual planting areas, nevertheless, about 30 to 40 per cent of the reported implementation program seems to have been unrealized.

Impact of the Labour-Intensive Program on Employment

The impact of the labour-intensive program on the local economy seems quite substantial. However, the employment created during the implementation of the program should be examined on a broader scale extending to the activities after the completion of the program. In this case, the employment multiplier coefficient plays a dominant role in evaluating the employment aspects of the program. Since most of the secondary impact of employment creation occurred in the agricultural sector, then it could be expected that the agricultural sector would absorb the additional labour force in the rural areas.

In assessing the direct and indirect impacts of the labour-intensive public works programmes on employment, two related approaches could be used. The first is to count the number of people employed during and after the implementation of the projects. Second, instead of counting the absolute number of workers, the focus of attention should be put on the number of man-days used by the program. In other words, emphasis will be given to the labour utilization intensity during the last 15 years. The employment creation of the program usually follows the second approach by limiting the calculation on the direct or primary impact only. This attitude has been taken, not because of the unimportant aspects of the secondary employment generation but due to the difficulty in calculating the employment multiplier coefficient.

The average annual employment absorptive capacity of the labour-intensive public works programmes was estimated to be around 0.64 million persons in the 100-day job or approximately around 64 million mandays (See Table 4). Since the jobs in the public works programmes were not on a full-time basis, then the estimated 100 days work seems to be reasonable. Most of the labour-intensive public works activities were conducted during the slack seasons. Usually, the rehabilitation and construction projects recruited the labour around the project sites. The local workers were being utilized on more than one project since the skilled workers in the rural areas were scarce.

The workers attracted to the labour-intensive public works programmes were mostly characterized as poor, unemployed or underemployed, unskilled, and to certain extent illiterate. Since the employment opportunities in the agricultural sector were few during the slack seasons, even the low-paying *New Padat Karya* Program seemed to be more attractive than unemployment. Due to the poverty in the rural areas, particularly in Java, the rural labourers grab any kind of job available in the areas. The *New Padat Karya* Program was

Table 4 — Specific Labour-Intensive Public Works Programmes in Indonesia: Number of Employed Persons and Unit Costs per Employed Persons, 1969/70-1983/84

Year	Employment Creation			Unit Costs per Employed Person (Rp'000) ^a				
	Padat Karya Program (man-day)	Inpres II Program	Replanting and Afforestation station (100-man-days)	Kabupaten Supporting Road Program		Inpres II Program	Replanting and Afforestation station	Kabupaten Supporting Road Program
				Total	Total			
1969/70	75,000	—	—	—	750	172.8	—	—
1970/71	65,000	212,00	—	—	212,650	230.2	—	—
1971/72	138,000	303,000	—	—	304,380	202.9	—	—
1972/73	160,000	437,000	—	—	438,600	500.0	—	—
1973/74	73,000	534,000	14,450	—	549,180	1,027.4	—	—
1974/75	56,000 ^b	905,130	15,728	—	921,418	1,964.3	—	—
1975/76	62,000	1,004,871	17,456	—	1,022,947	2,580.6	—	—
1976/77	273,569 ^c	824,398	43,111	—	870,245	2,186.4	371.1	—
1977/78	346,844 ^d	771,295	67,235	—	841,998	3,171.8	364.4	—
1978/79	161,713	788,150	71,614	—	861,381	6,802.7	502.7	—
1979/80	197,449	563,969	65,284	56,116	687,343	7,396.1	624.9	231.7
1980/81	209,629	558,781	57,766	81,118	699,761	9,923.7	841.2	320.5
1981/82	207,118	589,065	26,056	182,754	749,946	10,381.4	2,701.8	414.3
1982/83	266,591 ^e	589,000	40,455	169,254	801,375	12,603.2	329.2	493.8
1983/84	230,010	486,608	64,154	141,090	694,152	14,173.9	925.9	598.3

^a Unit costs per employed person were calculated on the basis of 100-day-work.

^b Since 1974/75 has been expanded into the *New Padat Karya* Program.

^c Including 214,638 persons employed for rehabilitating the areas due to the natural disasters. Otherwise, the number of employed persons was 58,931 only.

^d Including 240,204 persons employed for rehabilitating the areas due to natural disasters. Otherwise, the number of employed persons was 106,640 only.

^e Including the employed persons working at the natural disaster rehabilitating area.

Source: Compiled and calculated from *Laporan Tahunan Kementerian Pekerjaan Umum dan Perumahan Rakyat* (Reports to the State Address

thus rather unsuccessful outside Java, due to the better living condition of the people. Even the higher-paying Inpres II Program found difficulty in attracting the laborers.

Nevertheless, the supply of underutilized labour was still high — approximately around 195 million man-days per year. Since the jobs available were 64 million man-days, the capacity of the labour-intensive public works programmes to absorb the additional underutilized labour force was 33 per cent. In other words, about one-third of the additional underutilized labour force could be absorbed by the labour-intensive programmes — especially the Inpres II Program.

The labour-intensive public works programmes were intended to give additional supplementary jobs rather than permanent employment. The workers attracted to these programmes, as expected, should then come from the underutilized labour force. Thus, it is not appropriate to look into the total labour force as the source of manpower.⁵

Tapping the underutilized labour force into the public works programmes has lessened the employment pressure in the rural agricultural areas. By removing the underutilized labour force from the agricultural sector, the productive capacity of the remaining labour could be increased. The disguised unemployment in the agricultural sector could be used in a more productive way in the other sectors. Nevertheless, the other two-thirds of the underutilized labour force remained untouched.

The provision of supplementary jobs for the rural labour force, although not sufficient to solve the problems of rural employment, could at least pump additional income into the rural areas. Since open unemployment could not be defined more precisely for the rural areas, then the problems of the underutilization of labour seem to be more dominant.

However, monitoring the labour absorptive capacity of the public works programmes was not as easy as counting the number of completed projects. This difficulty emerges when we look at the estimated costs per employed person during the last 15 years (Table 4).

Quite surprisingly, the estimated costs per employed persons in the *New Padat Karya* Program were higher while the wages paid were

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See the different approach used by the World Bank in *Indonesia: Financial Resources and Human Development in the Eighties* (Washington D.C.: May 8, 1982).

lower than the other labour-intensive public works programmes. Three possibilities could explain these figures. First, the employment creation of the *New Padat Karya* Program was underestimated.⁶ The employment reporting system used the man-day units. In order to make the data comparable, labour absorption of the *New Padat Karya* Program was transformed into 100 man-day units.

Second, the labour absorptive capacity of the Inpres II Program could be overestimated.⁷ This is indicated by the rather low estimated costs per employed persons, working in 100 days, especially at the beginning of the program implementation. This problem occurred also in the Replanting and Afforestation Program.

However, no estimates have been made on the extent of employment creation in the *Kabupaten* Supporting Road Program. The focus seems to be on the total government expenditure incurred by this program. Since it was conducted in the sparsely populated rural areas, then the estimated costs per employed person, logically, should be higher by about 50 per cent than in the densely populated areas of the Inpres II Program. Through the estimated costs per employed person, the employment creation of the *Kabupaten* Supporting Road Program could be roughly estimated.

Third, the cost components of the *New Padat Karya* Program differed substantially from the other labour-intensive public works programmes. The Inpres II, Replanting and Afforestation, and *Kabupaten* Supporting Road Programmes used the field operational costs for their implementation. However, the *New Padat Karya* Pro-

⁶It was not quite clear how the *Padat Karya* Program estimated the number of employment creation through the program.

⁷According to Mr. Atar Sibero (now the Director General of Regional Development, Ministry of Home Affairs), the estimated employment creation of the Inpres II Program was made indirectly through the total payment of wages for 100 working days. The total wages were calculated on the basis of the direct and the estimated indirect wages — about 80 per cent of the total costs of the local construction materials — by using the equations

$$N = \frac{X}{100 \text{ days}}$$

$$\text{and } X = \frac{W + 0.8 M}{w} \text{ man-days}$$

where N = Total employment creation
 W = Total wages
 M = Total costs of the construction materials
 w = Average wage per labour
 X = Total labour utilization in man-days.

gram seems to include the indirect-non-operational costs, which, judging from estimates, were higher than the operational costs.

Nevertheless, the estimated costs per employed persons for the labour-intensive public works programmes increased dramatically over the last 15 years. Although the increase was partly due to the increasing wages,⁸ it was largely because of the increasing use of heavy machineries, such as road rollers, stone crushers, etc.

Direct governmental intervention in creating employment through the public works programmes had encouraging results. By expanding the programmes, the reserved underutilized labour force could be activated. However, relying solely on these programmes for creating employment opportunities can not really solve the employment problems of Indonesia.

Conclusions

One of the four-pronged employment policies of Indonesia was the direct central governmental intervention in employment creation through the labour-intensive public works programmes, namely the *New Padat Karya*, Inpres II, Replanting and Afforestation, and the *Kabupaten* Supporting Road Programmes. Although the programmes could not assure continuous permanent jobs, it could, however, relieve employment pressures through supplementary off-the-season employment opportunities.

The labour-intensive public works programmes could be considered successful whether in terms of the impact of the programmes to the local economy or to the direct employment creation during the implementation of the programmes. A large part of the programme activities was directed toward the improvement of the rural supporting road networks, including small bridges, throughout the country. Efforts have been made to undertake small-scale irrigation projects such as the opening of tertiary irrigation canals. Although the programmes consisted of small projects scattered throughout the country, their impact on the local economy was quite substantial.

Since the programmes provided supplementary jobs rather than main jobs, then the underutilized labour force expectedly became the main source of manpower for the programmes. About one-third of the reserved underutilized labour force was activated during the programme's implementation.

⁸The average wage per labour was derived from the arithmetic mean of the wage payments for three manual laborers and one carpenter. See Sibero (1973).

The programmes can be expanded in the future. However, relying solely on the labour-intensive public works programmes is not the solution to the Indonesian employment problems. A broader employment policy will be needed.

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