PD-ABJ-340

AGRICULTURAL SECTOR SUPPORT PROJECT
PRIVATE SECTOR AGRIBUSINESS

ILLUSTRATION OF PROJECT IMPACT ON AFGHANISTAN AGRICULTURE 1989-1991

Prepared by ASSP/PSA Information Services, Development Alternatives, Inc., for the Office of the AID Representative to Afghanistan under Contract Number 306-0204-C-009829-00.

Islamabad, Pakistan October 1991

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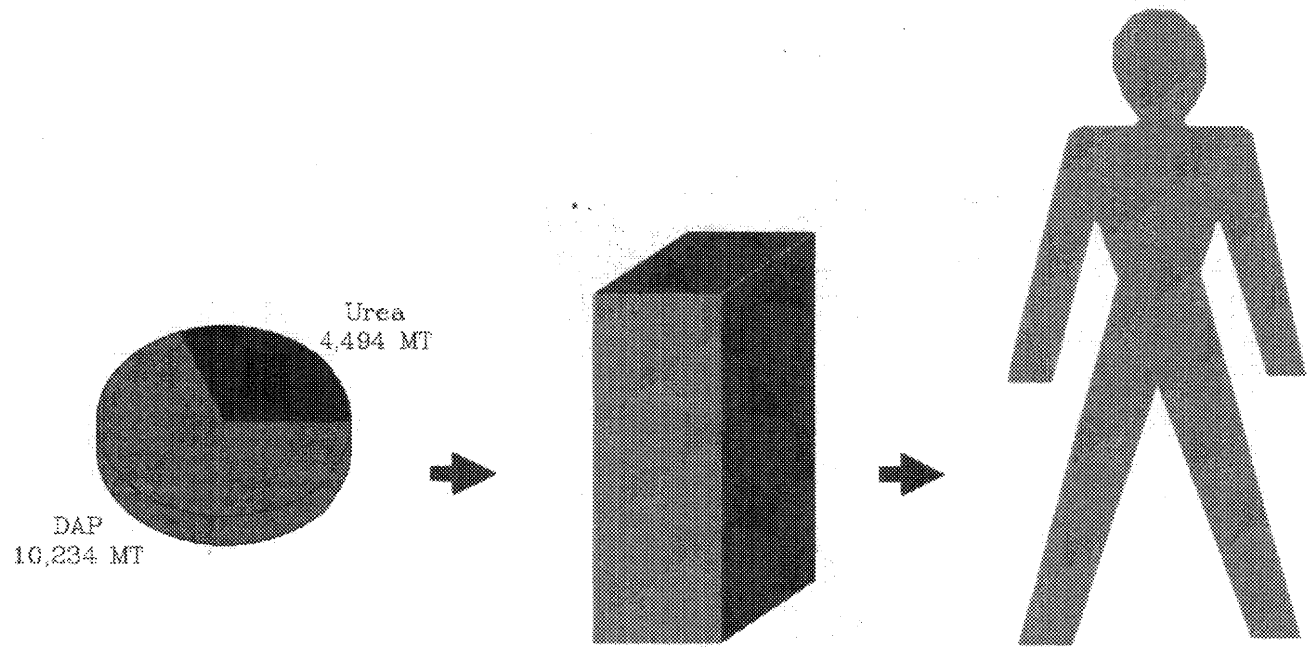
DAI/ASSP 1990 Afghanistan Fertilizer Program



15,000 MT Fertilizer

79,600 MT
Additional Wheat
Valued at $14.6 mil.

Grain Requirements
for 400,000 People
for One Year

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Project Impact Graphics: Introduction

The Private Sector Agribusiness portion of the Afghanistan Agricultural Sector Support Project has contributed to increases in agricultural production in select provinces of Afghanistan. Activities have focused on creating sustainable improvements in the delivery of agricultural inputs, both material and expertise, for select crops. The results of project sponsored initiatives for grain production has yielded immediate returns, while horticultural crops require several years of cultivation before production increases are realized.

The accompanying maps, graphics and tables illustrate the impact that ASSP/PSA has had to date.

Map 1. Impact of ASSP 1990 Fertilizer Program in Afghanistan. Quantities, in metric tons of fertilizer (approximately 2/3 DAP and 1/3 Urea) delivered to distribution points within Afghanistan are shown. The Impact Area represents best estimates of where the fertilizer ended up on farm fields for winter wheat production. Figure 1 suggests the impact of fertilizer distribution. An additional 80,000 metric tons of grain production resulted from fertilizer use.

Map 2. District Level Wheat Production in Afghanistan from ASSP Wheat Seed Program, 1989-1992. When combined with fertilizer, the high yielding varieties of wheat seed distributed by ASSP for seed multiplication is estimated to increase production by 40% over traditional varieties. Map 2 illustrates the added wheat production in metric tons for those districts which have already received and are programmed to receive improved seed through the fall of 1991. Figure 2 suggests that as the seed is replicated and distributed by participating farmers, in excess of 20,000 metric tons of wheat has already been produced through the 1990-91 season. Should ASSP be able to move its 550 metric tons of improved wheat seed into Afghanistan this year, in 1992 the cumulative effect will be to have added another 116,000 metric tons of wheat production.

Map 3. Added Fruit Production and Number of Beneficiaries from ASSP Orchard Rehabilitation Program. The ASSP horticulture crop program has multiplied and distributed fruit tree seedlings in the southeastern provinces. Map 3 illustrates the number of farmers participating in this program and the additional fruit production beginning in 1995 as a result of the orchards that have been established. Figure 3 demonstrates the cumulative effect of the growth of this program now that the nurseries have been commercialized and continue to produce fruit tree seedlings for sale to farmers. The value of these fruit crops, resulting from the Orchard Rehabilitation Program, by province, are illustrated in Map 4.

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IMPACT OF ASSP 1990 FERTILIZER PROGRAM IN AFGHANISTAN

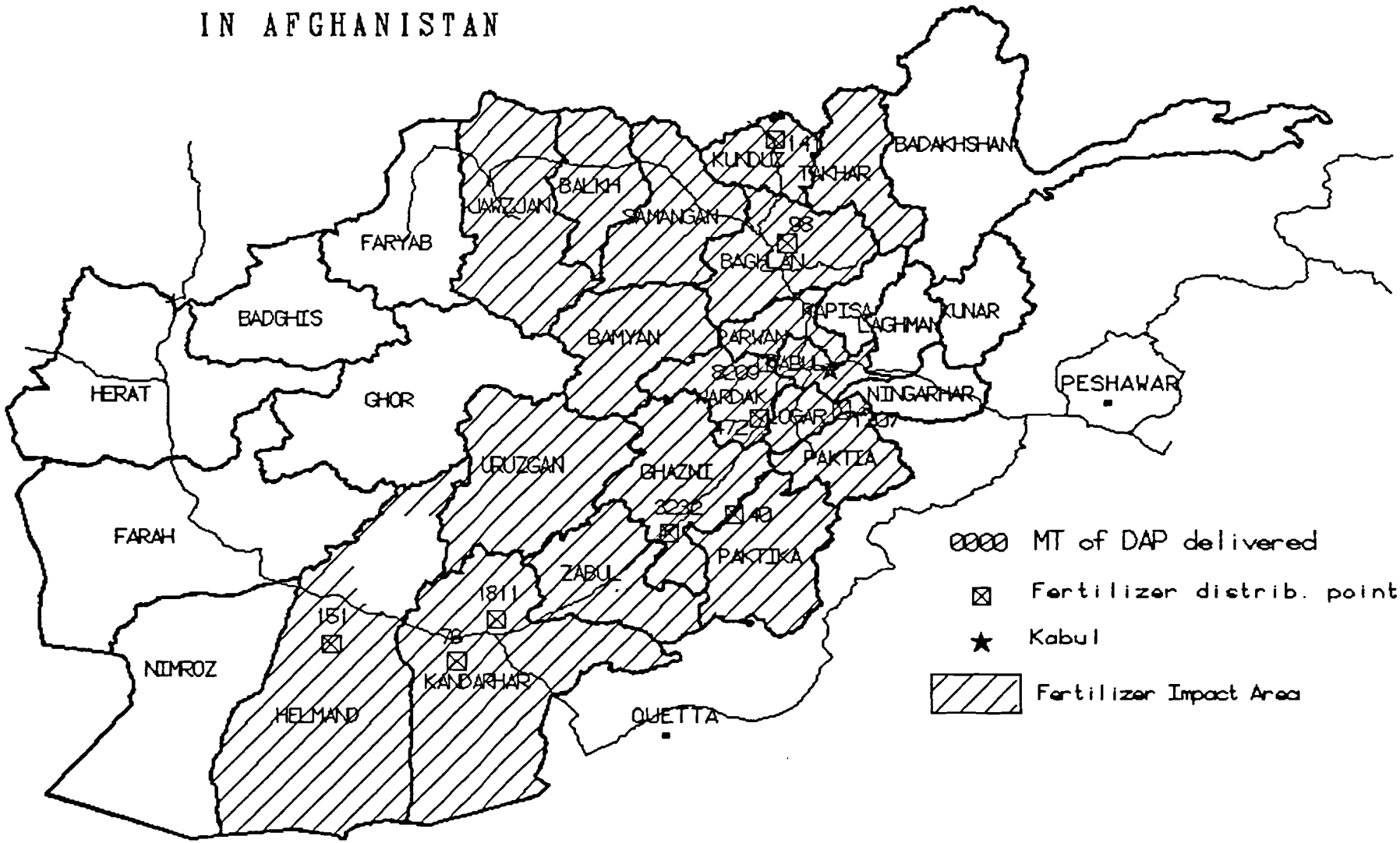

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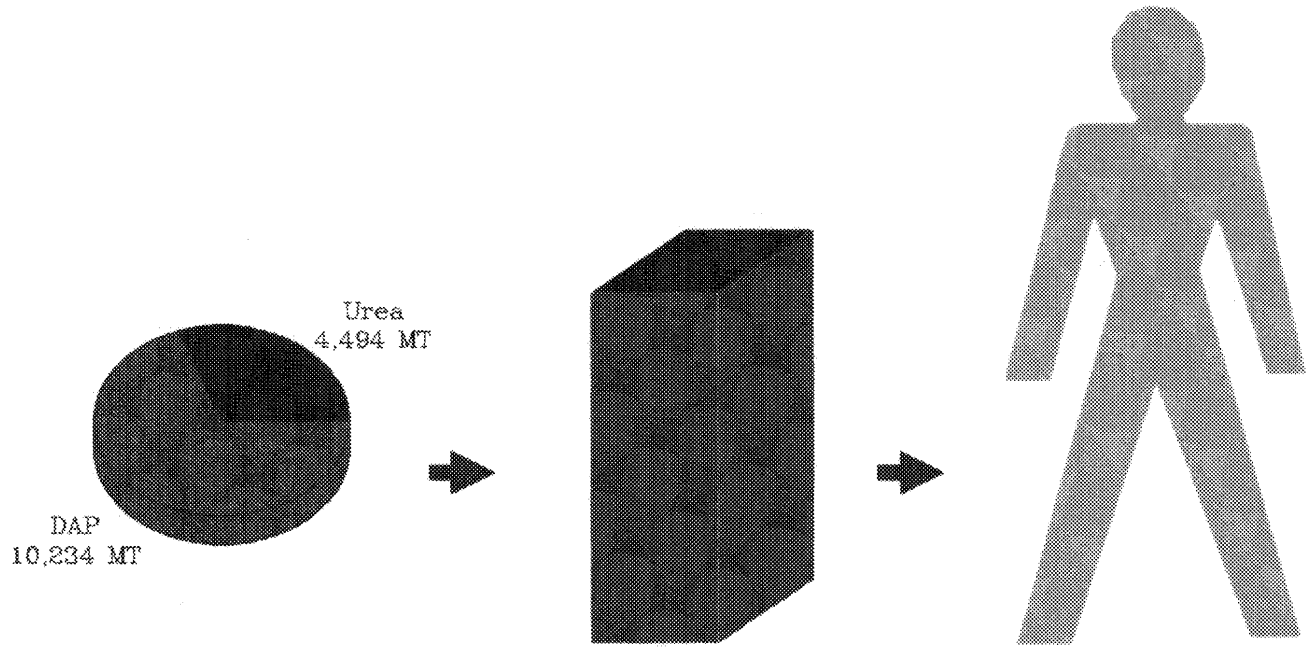
Figure 1.

DAI/ASSP 1990 Afghanistan Fertilizer Program



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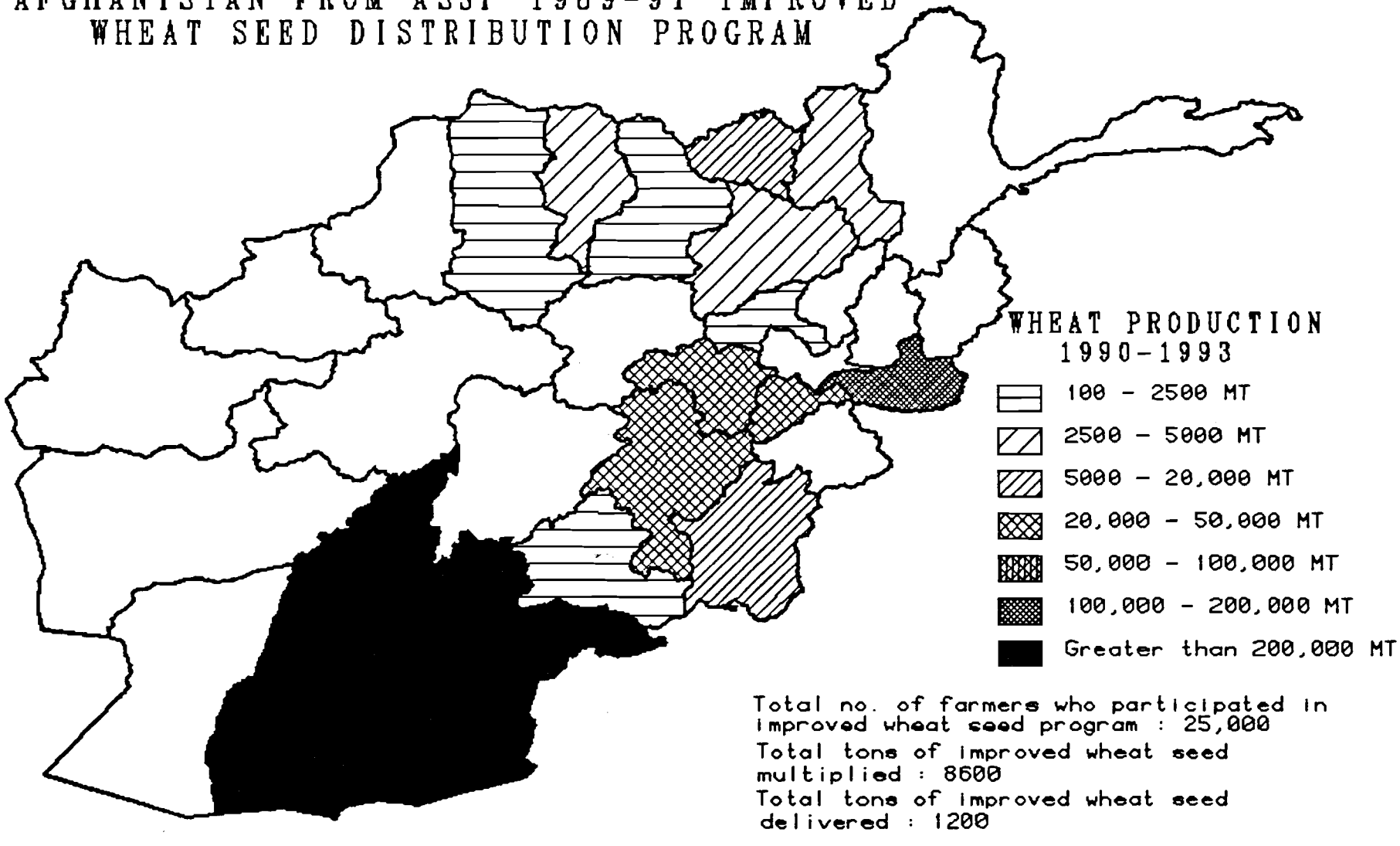
ESTIMATED IMPACT OF ASSP 1990 FERTILIZER PROGRAM

DAI/ASSP delivered approximately 15,000 metric tons of fertilizer to various provinces of Afghanistan in 1990 through its Private Sector Agribusiness program, an amount far exceeding that of any other assistance program. Assuming farmer purchases range from a couple of 50 kilogram bags to one or two tons, up to 20,000 farmers have benefited from access to normally scarce phosphate fertilizer.

When applied to irrigated fields of wheat (the predominant food crop of Afghanistan), this amount of fertilizer would produce an additional total amount of 79.6 thousand metric tons of wheat, enough to meet the grain requirements for approximately 400 thousand people for one year. The value of this additional wheat produced is 14.6 million dollars (in terms of 1991 harvest period prices and exchange rates in Afghanistan).

CUMULATIVE WHEAT PRODUCTION (1990-93) IN AFGHANISTAN FROM ASSP 1989-91 IMPROVED WHEAT SEED DISTRIBUTION PROGRAM



Total no. of farmers who participated in improved wheat seed program : 25,000

Total tons of improved wheat seed multiplied : 8600

Total tons of improved wheat seed delivered : 1200

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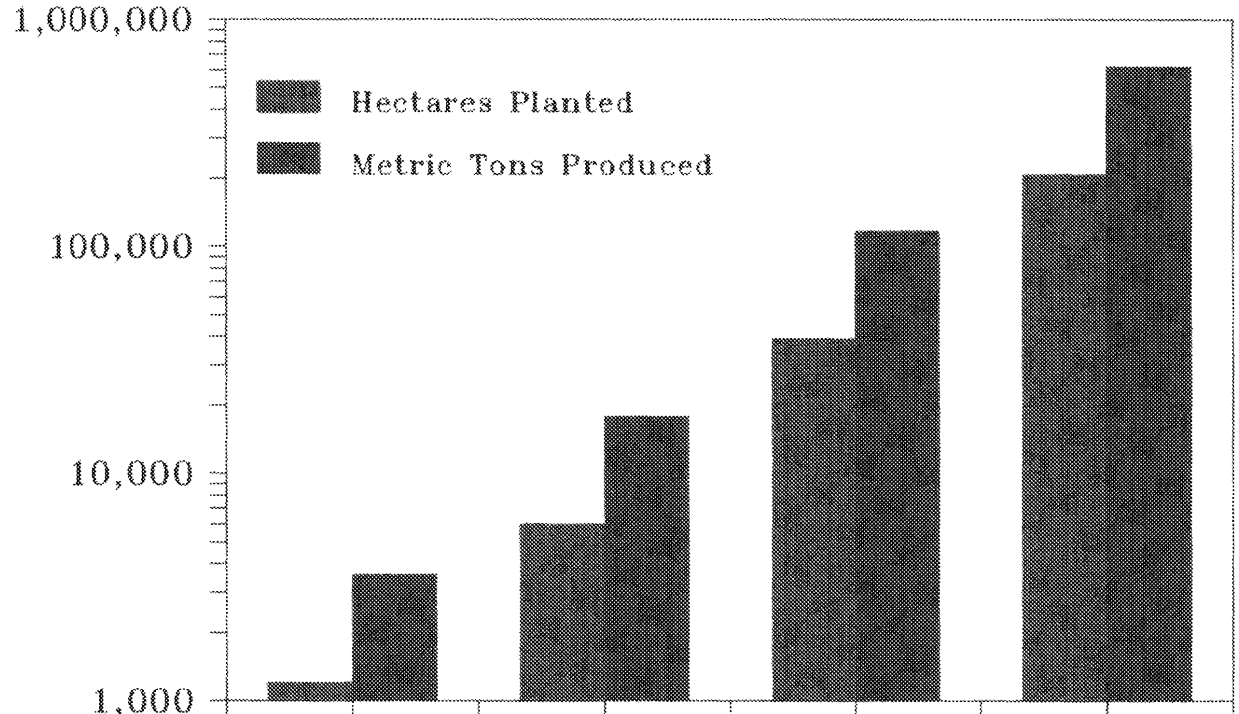
Figure 2.

Hectares Planted and Production from ASSP Afghanistan Improved Wheat Seed Distribution Program



	1989/90	1990/91	1991/92	1992/93
Hectares Planted	1,187	5,933	38,767	206,552
Metric Tons Produced	3,560	17,800	116,301	619,655

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ESTIMATED IMPACT OF
ASSP IMPROVED WHEAT SEED DISTRIBUTION PROGRAM
IN AFGHANISTAN

Attributing 40 percent of total wheat production to the use of improved wheat seed indicates that 303 thousand additional metric tons of wheat will be produced over the period 1989-1992 from improved wheat varieties distributed by ASSP and through farmer multiplication. The total value of this additional wheat is 50.3 million dollars in terms of current wheat prices and exchange rates in Afghanistan. The additional production of 303 thousand metric tons is enough to meet the estimated annual requirement for grains 1.5 million people.

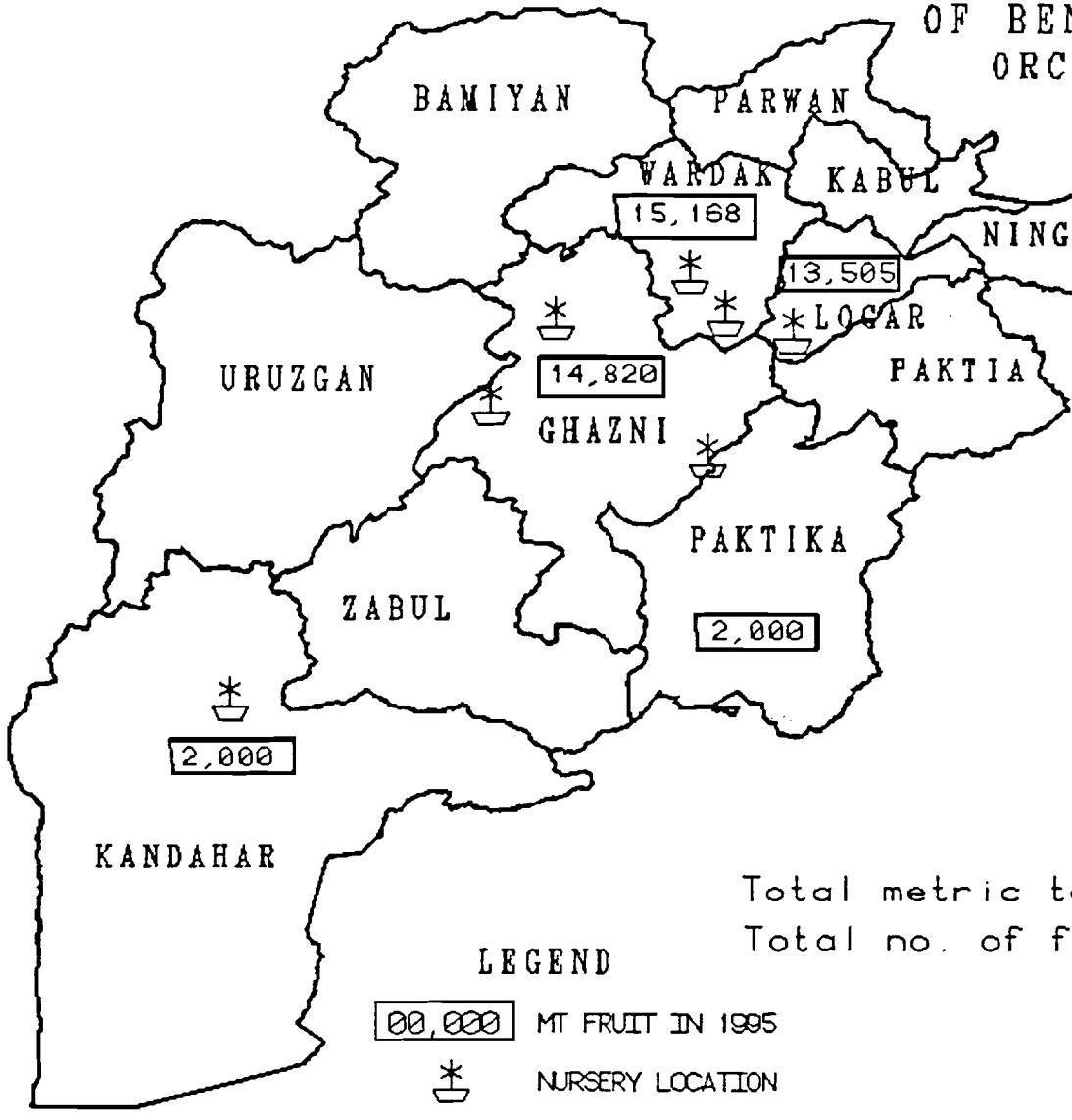
In 1992, the area planted in improved varieties could reach over 200,000 hectares, or approximately ten percent of Afghanistan total irrigated cereals area. Given the small size of individual agricultural land holdings, beneficiaries could reach a quarter of a million farmers.

	Source of Improved Seed			Wheat Produced	
Crop Year	ASSP Annual Program	Farmer Multiplication[a]	Hectares Planted to Improved Var.	MT	Value
	(Metric Tons)				(US$)
89/90	178	--	1,187	3,560	0.6
90/91	273[b]	890	5,933	17,800	3.0
91/92	382[b]	4,450	38,767	116,301	19.3
92/93	--	29,075	206,552	619,655	102.9
Total	**833**	**34,415**	**--**	**757,316**	125.6

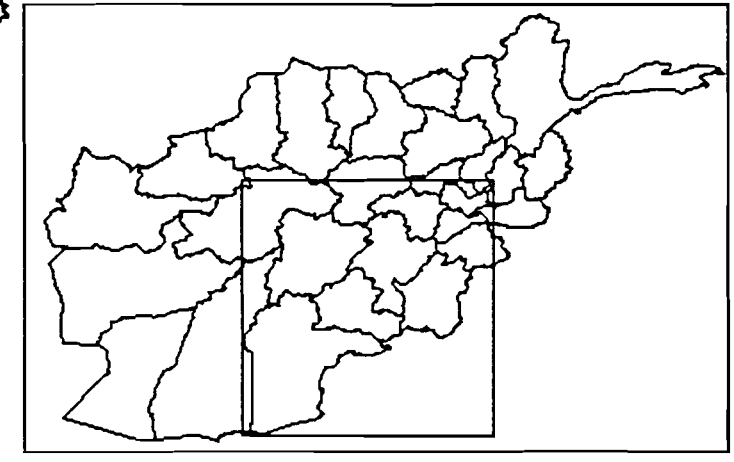
[a] Farmer multiplication assumes that a quarter of improved wheat produced is saved for seed.

[b] Does not include 200 MT distributed by MCI in collaboration with ASSP.

ADDED FRUIT PRODUCTION AND NUMBER OF BENEFICIARIES FROM ASSP ORCHARD REHABILITATION AND NURSERY PROGRAM



MAP SHOWING ACTIVITY AREA



Total metric tons of fruit produced : 47,493

Total no. of farmer beneficiaries : 5309

LEGEND

00,000 MT FRUIT IN 1995

NURSERY LOCATION

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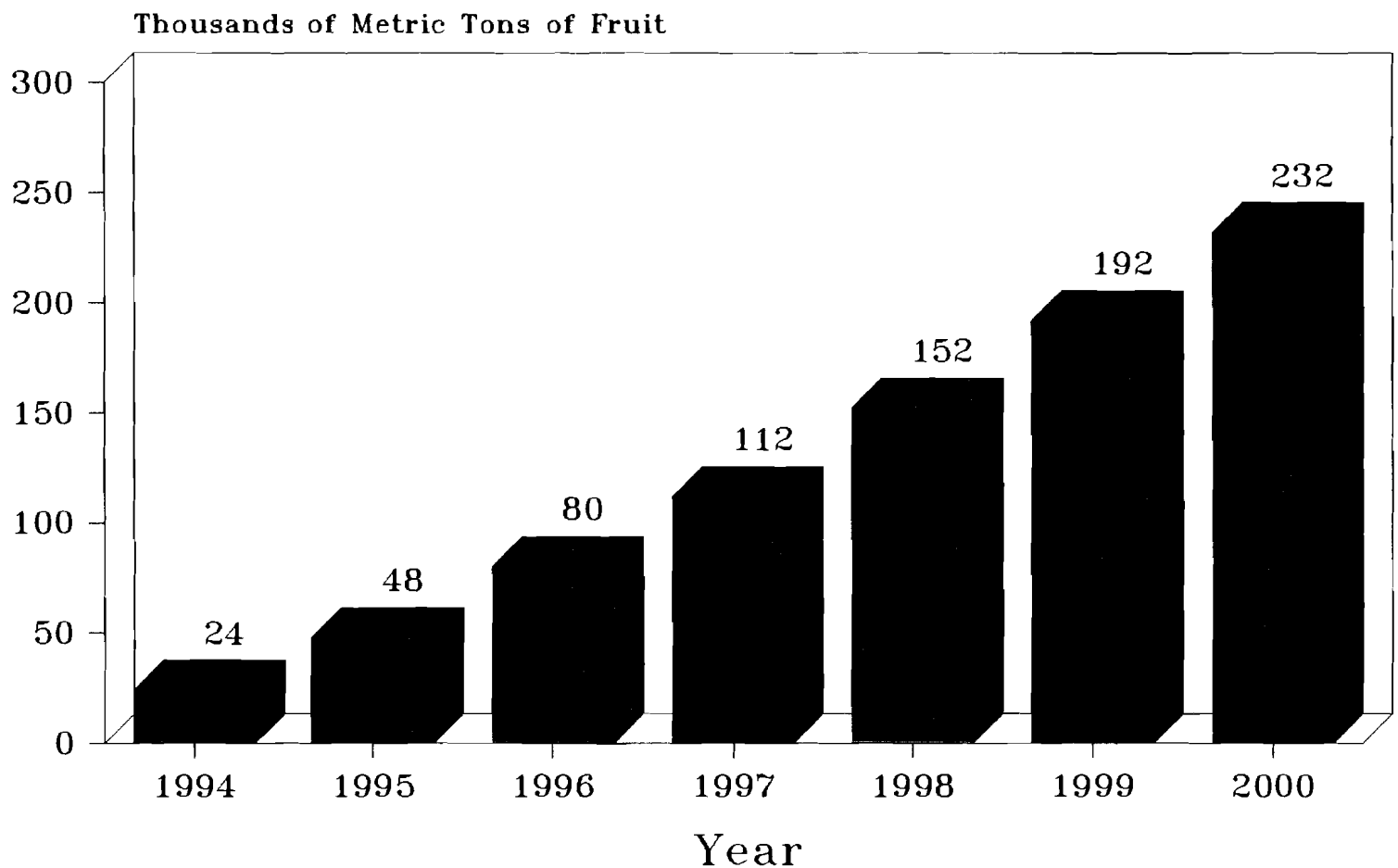
Figure 3.

Future Fruit Tree Production from ASSP Orchard Rehabilitation and Nursery Establishment Programs



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ESTIMATED IMPACT OF DAI/ASSP ORCHARD AND NURSERY ESTABLISHMENT PROGRAMS, 1990-91

Since 1990, DAI/ASSP has assisted 1,312 Afghan farmers with the establishment of fruit tree orchards. Altogether, farmers in the provinces of Ghazni, Logar, and Wardak have purchased a total of 264,000 apple seedlings, plus 6,300 seedlings consisting of an assortment of apricot, pear, plum, and grape cuttings.

In addition, DAI extension workers have established eight nurseries located in the provinces of Ghazni, Kandahar, Logar, Paktika, and Wardak. These nurseries are expected to produce over 800,000 seedlings annually, or the equivalent to establish 1,600 hectares of orchards each year. Assuming that most of these seedlings will go to small farmers, as many as 2,500 farmers annually may benefit from the access to quality seedlings and the promise of future income through the program each year.

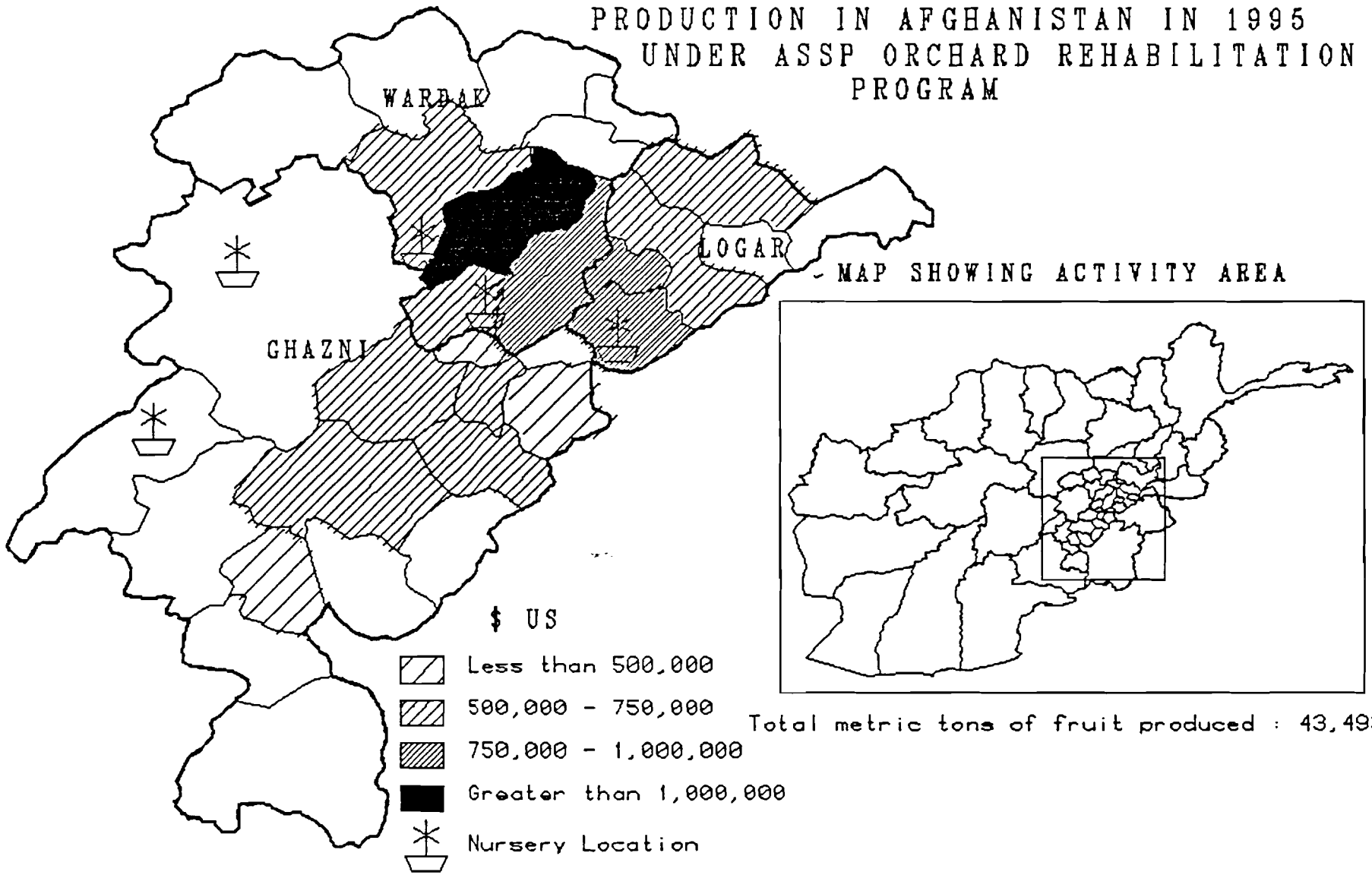
Fruit trees will start production after four years and will be in full production after seven years, producing approximately 25 metric tons of fruit per hectare per season. The combined orchard establishment and nursery distribution program will result in a sharp rise in additional Afghanistan fruit production starting from 18,300 metric tons in 1994 and reaching a total annual production of almost 250,000 metric tons by 2000. The annual value of this added production of fresh fruit in the year 2000 is estimated to be $55 million in current terms.

Seedling Inputs and Future Fruit Tree Production in Afghanistan under ASSP Orchard Rehabilitation Program

Year	Seedlings		Annual Added Hectares	Total Cumulative Production	
	New Orchards	Nursery		'000 MT	$mil.
1990	129,036	--	232		
1991	140,795	800,000	1,908		
1992	--	"	1,600		
1993	--	"	"		
1994	--	"	"	24	5.3
1995	--	"	"	48	10.6
1996	--	"	"	80	17.6
1997	--	"	"	112	24.6
1998	--	"	"	152	33.4
1999	--	"	"	192	42.2
2000	--	"	"	232	51.0

Notes: Production from seedlings was assumed to begin after four years, and reach full potential during the seventh year. Value of production is in current dollars.

ESTIMATED CURRENT VALUE OF ANNUAL FRUIT PRODUCTION IN AFGHANISTAN IN 1995 UNDER ASSP ORCHARD REHABILITATION PROGRAM



Total metric tons of fruit produced : 43,493

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