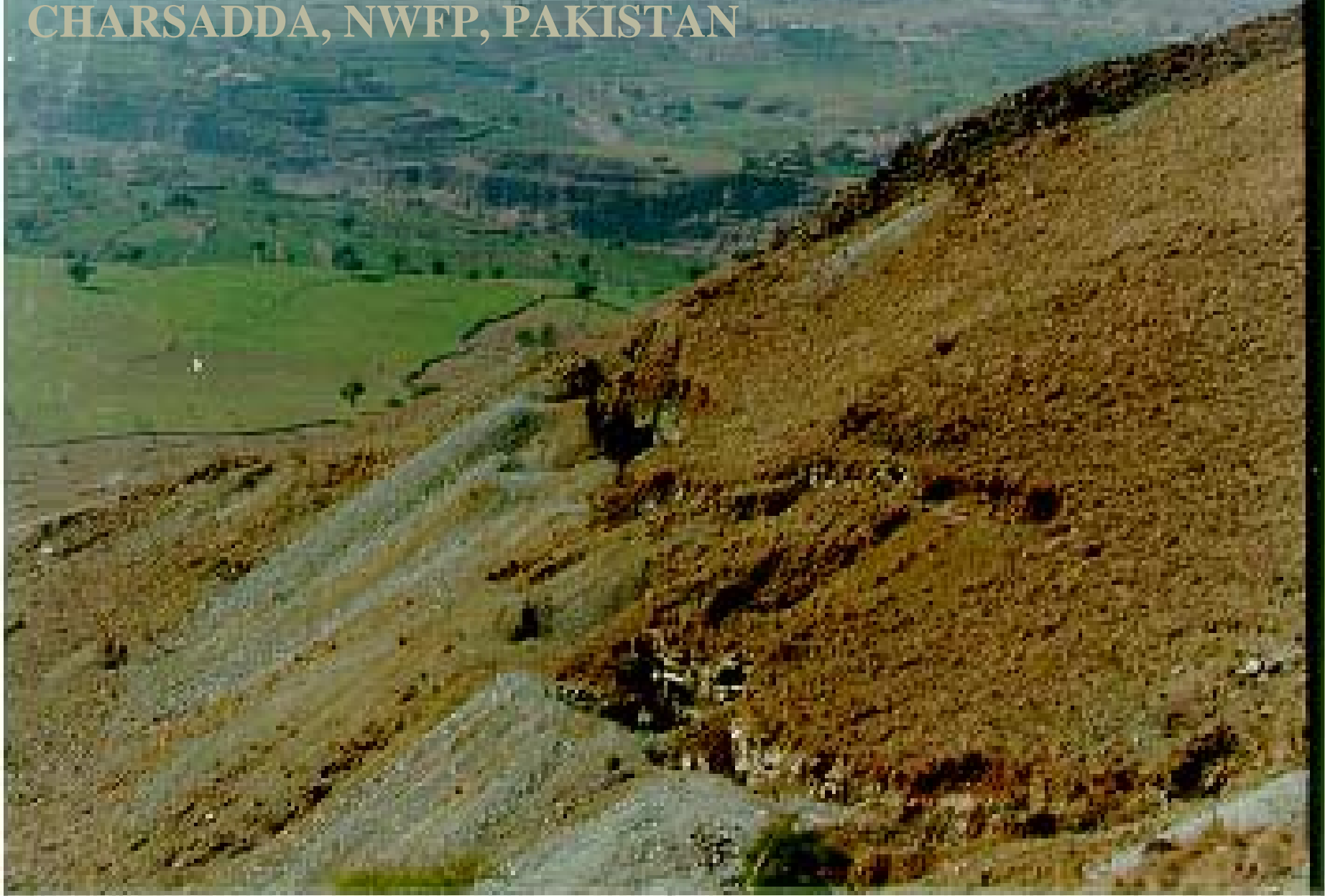


Figure 1.1a: Location map of the ophiolitic rocks of Pakistan (Modified after Shah, 1984)

# ASBESTOS MINES IN CHARSAKDA (BEHRAM DHERI)



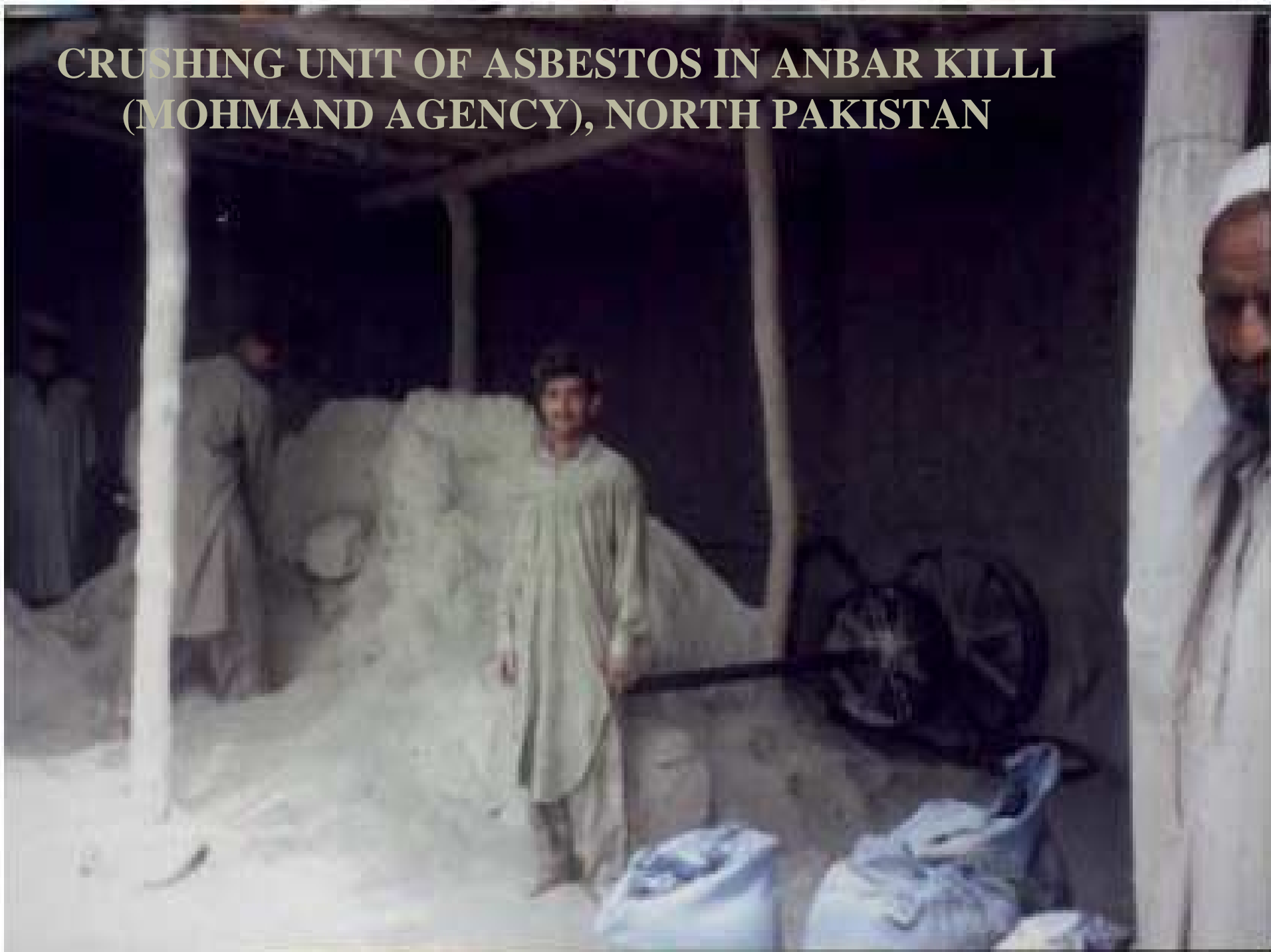
# ASBESTOS MINES LOCATED IN BEHRAM DHERI, CHARSADDA, NWFP, PAKISTAN



# ASBESTOS CRUSHING UNIT IN NAWE KILLI (MOHMAND AGENCY), NORTH PAKISTAN



**CRUSHING UNIT OF ASBESTOS IN ANBAR KILLI  
(MOHMAND AGENCY), NORTH PAKISTAN**

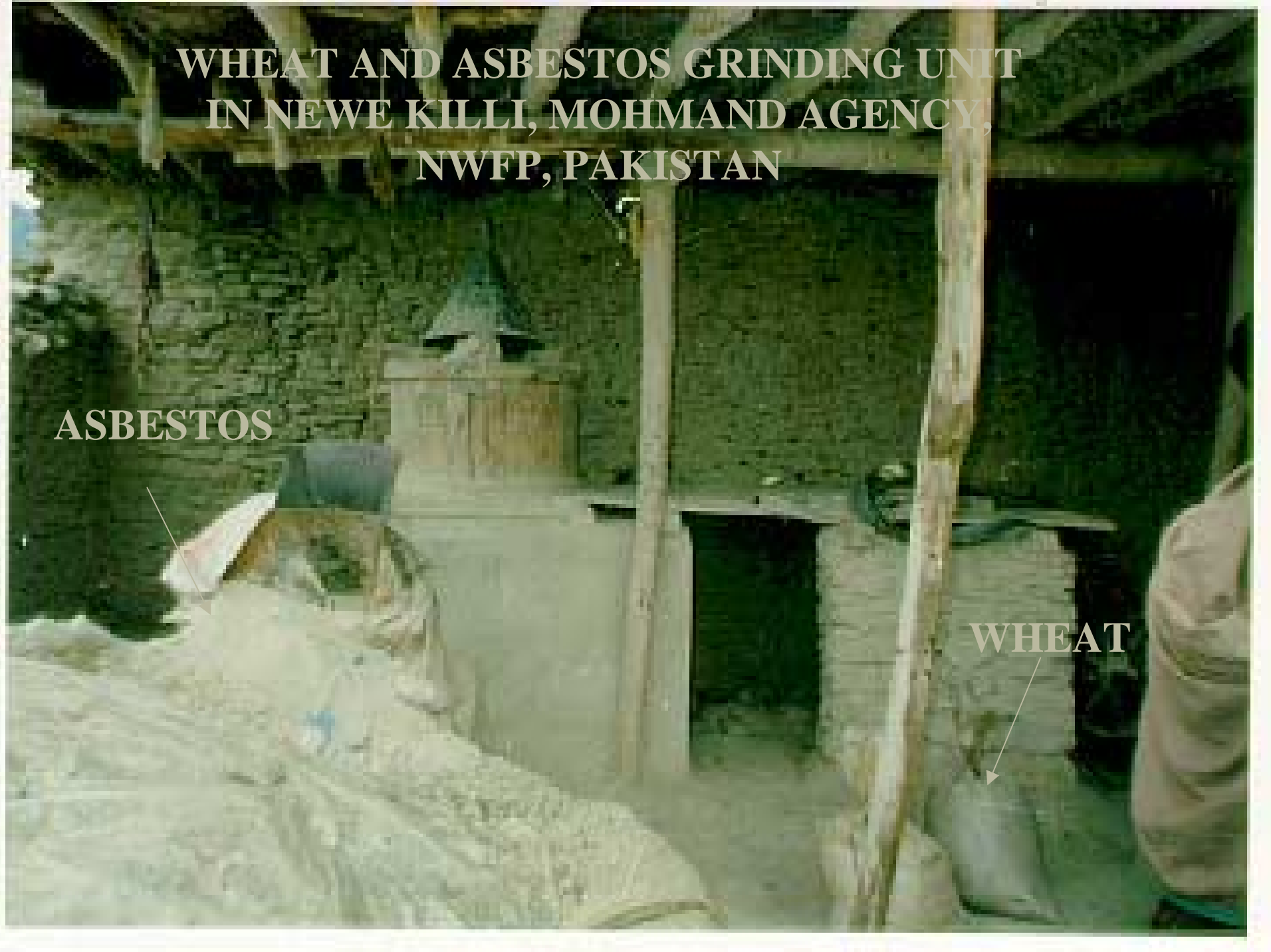


**WHEAT AND ASBESTOS GRINDING UNIT  
IN NEWE KILLI, MOHMAND AGENCY,  
NWFP, PAKISTAN**

**ASBESTOS**



**WHEAT**



**ASBESTOS PRODUCT MANUFACTURING UNIT IN  
MAIN MARKET , MARDAN CITY, NWFP,  
PAKISTAN**

**ELECTRIC HEATER  
PLATES**



# ASBESTOS PRODUCT MANUFACTURING UNIT IN PESHAWAR CITY, NWFP, PAKISTAN

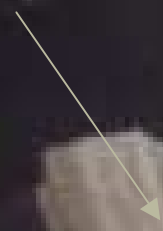
Asbestos  
Cement Sheets



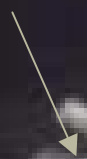
Pressure Pipes



Asbestos  
Insulation Plates



Asbestos



# Imported Raw Asbestos Bag

**Chrysotile**

**PRODUIT DU**  
**PRODUCT OF CANADA**



22 10 2001

**MULTINATIONAL ASBESTOS PRODUCT  
MANUFACTURING INDUSTRY(DADEX EITHER net**



IMPORTED RAW  
ASBESTOS



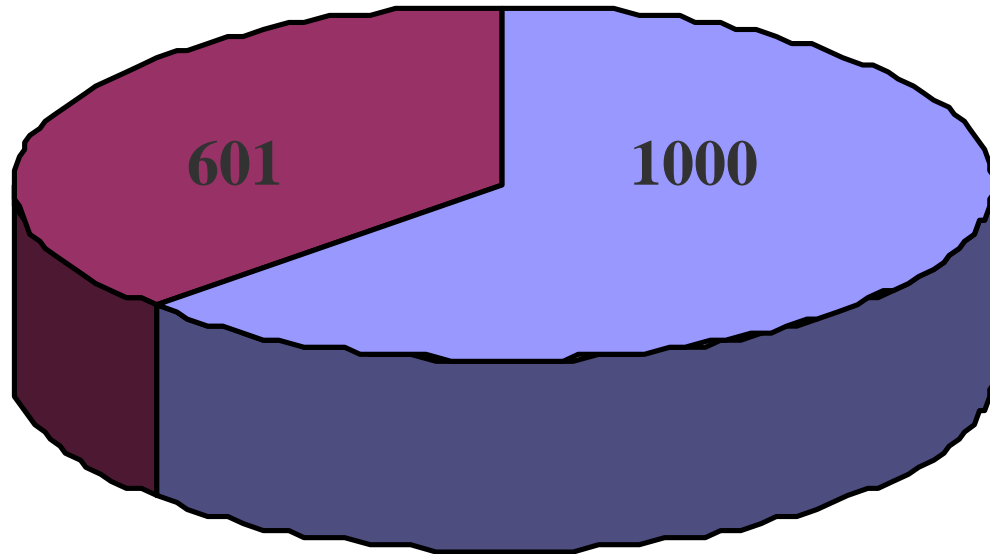
22 10 2001

# ASBESTOS BEARING SHEETS STORAGE CENTRE AT GADDANI SHIP BREAKING CENTRE , BALUCHISTAN



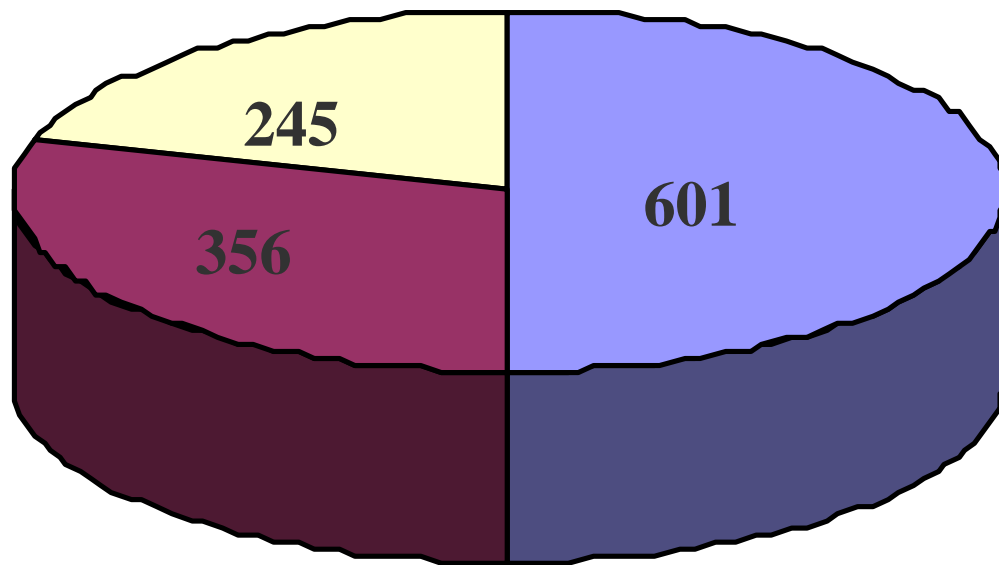
21 10 2001

**MESOTHELIOMA CASES**  
**DIAGNOSED IN NWFP, PAKISTAN**  
**DURING 1995-2003**



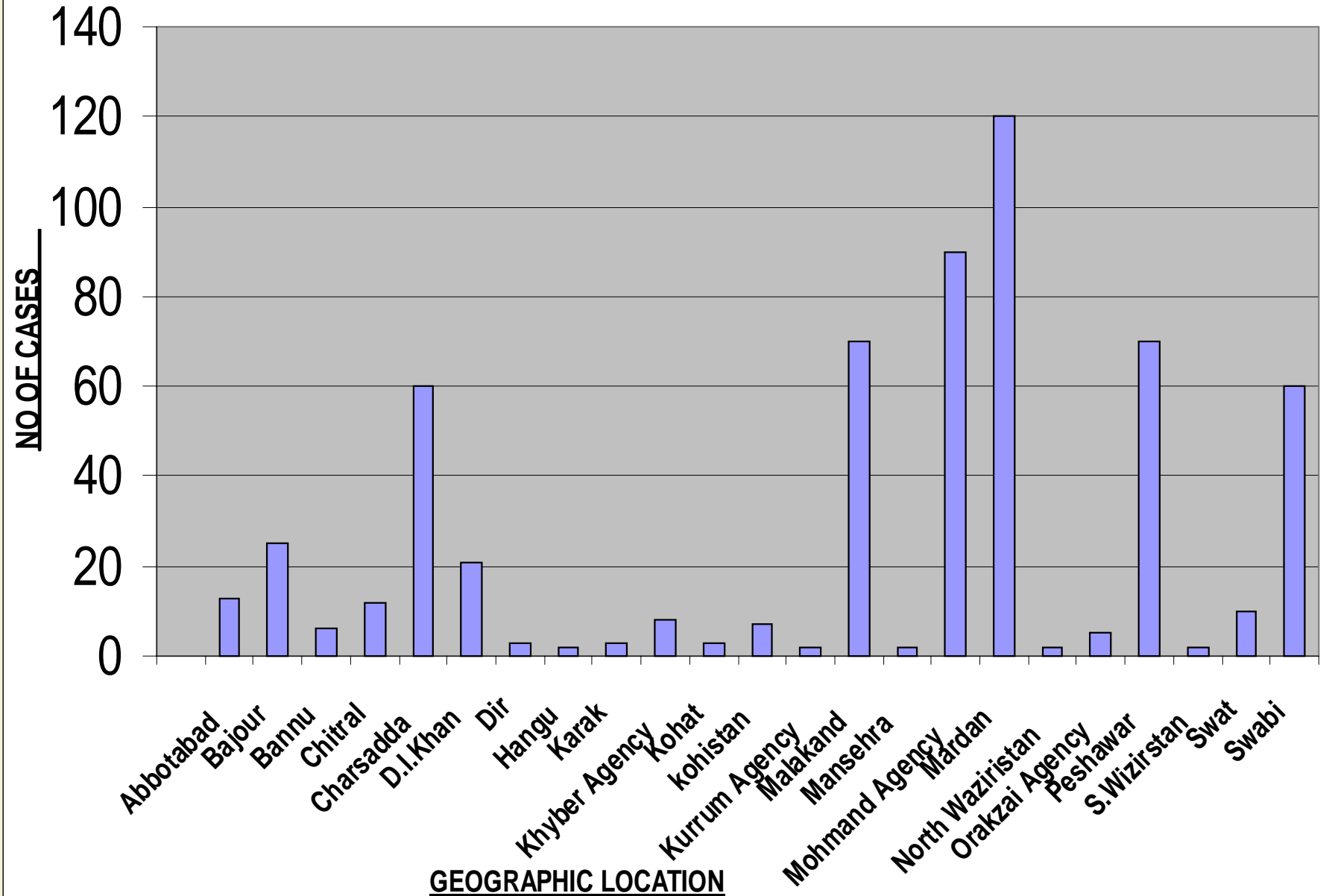
- 1 Total No of Cases Diagnosed
- 2 Total No of Cases Followed

# TOTAL NO OF MESOTHELIOMA CASES (MALE, FEMALE)

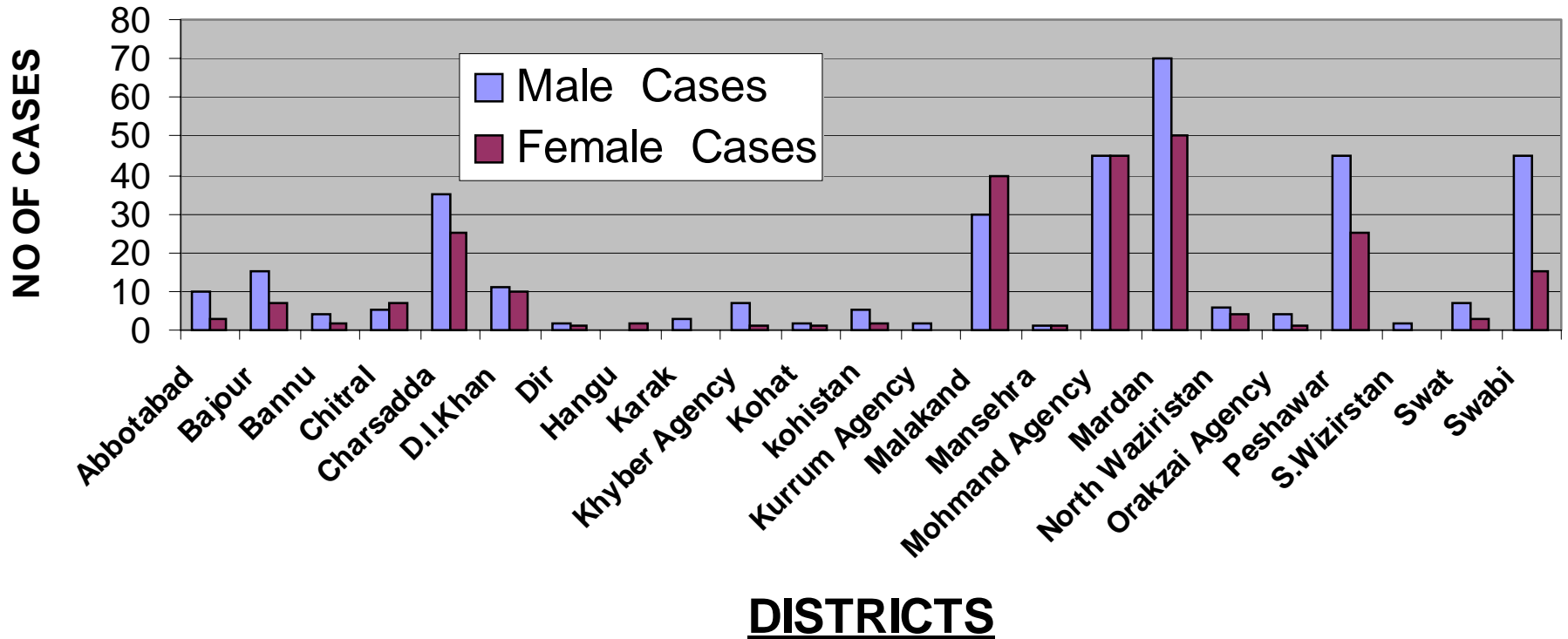


- Total No of cases
- Followed
- Male
- Female

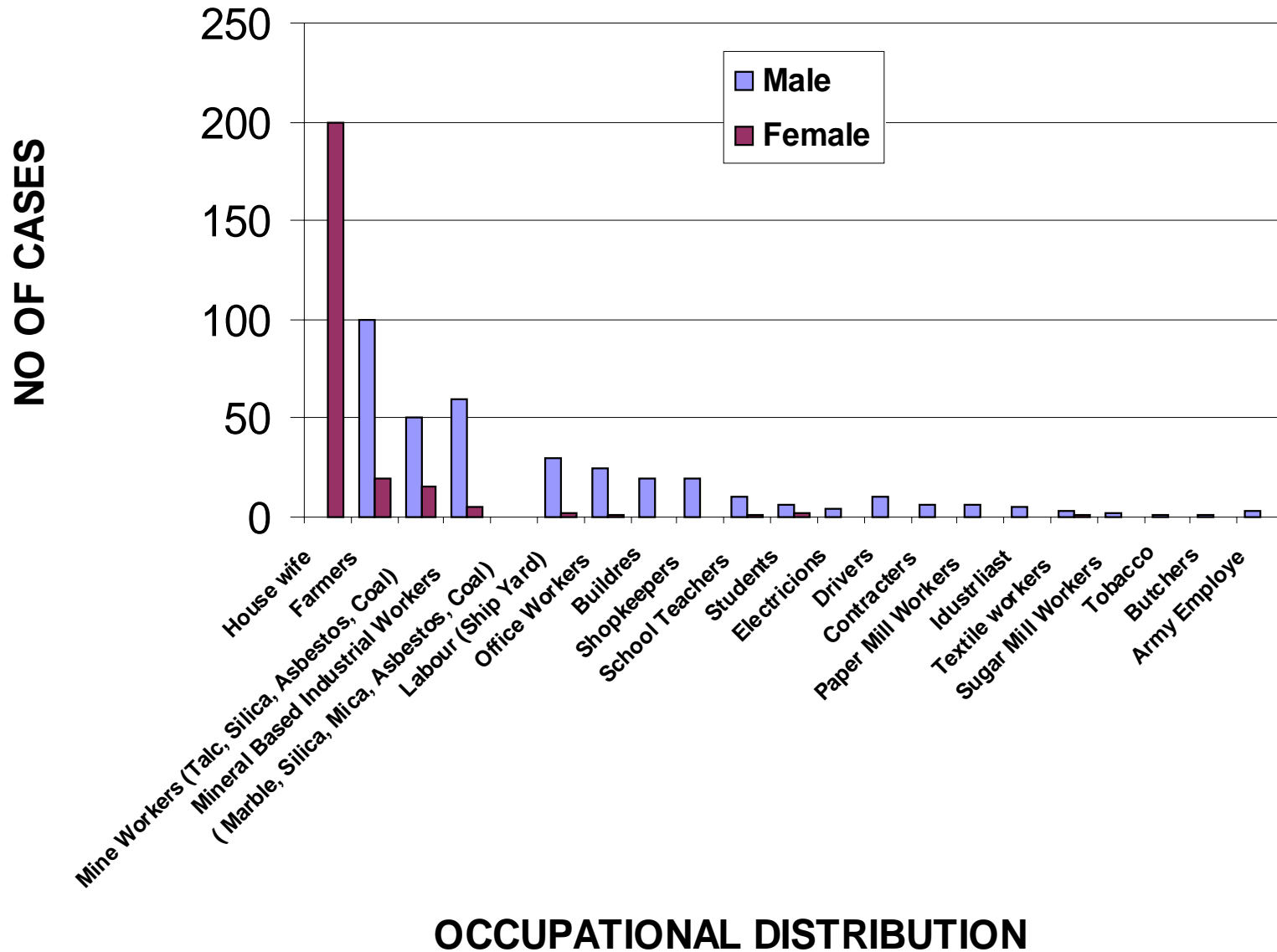
**GEOGRAPHIC DISTRIBUTION OF  
MESOTHELIOMA CASES IN NWFP, PAKISTAN**



# GEOGRAPHIC DISTRIBUTION OF MALE AND FEMALE MALIGNANT MESOTHELIOMA CASES IN NWFP, PAKISTAN



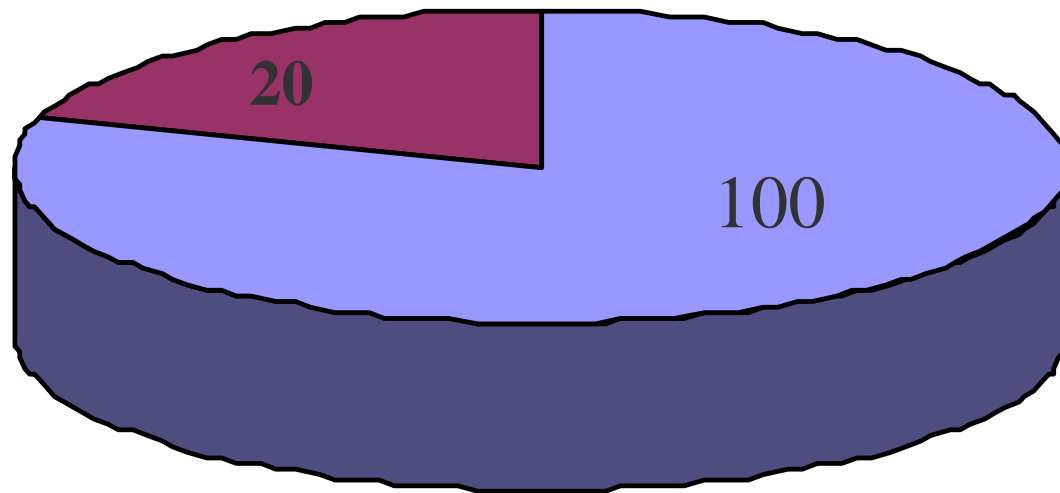
# OCCUPATIONAL DISTRIBUTIONAL OF MESOTHELIOMA CASES (MALE & FEMALE)



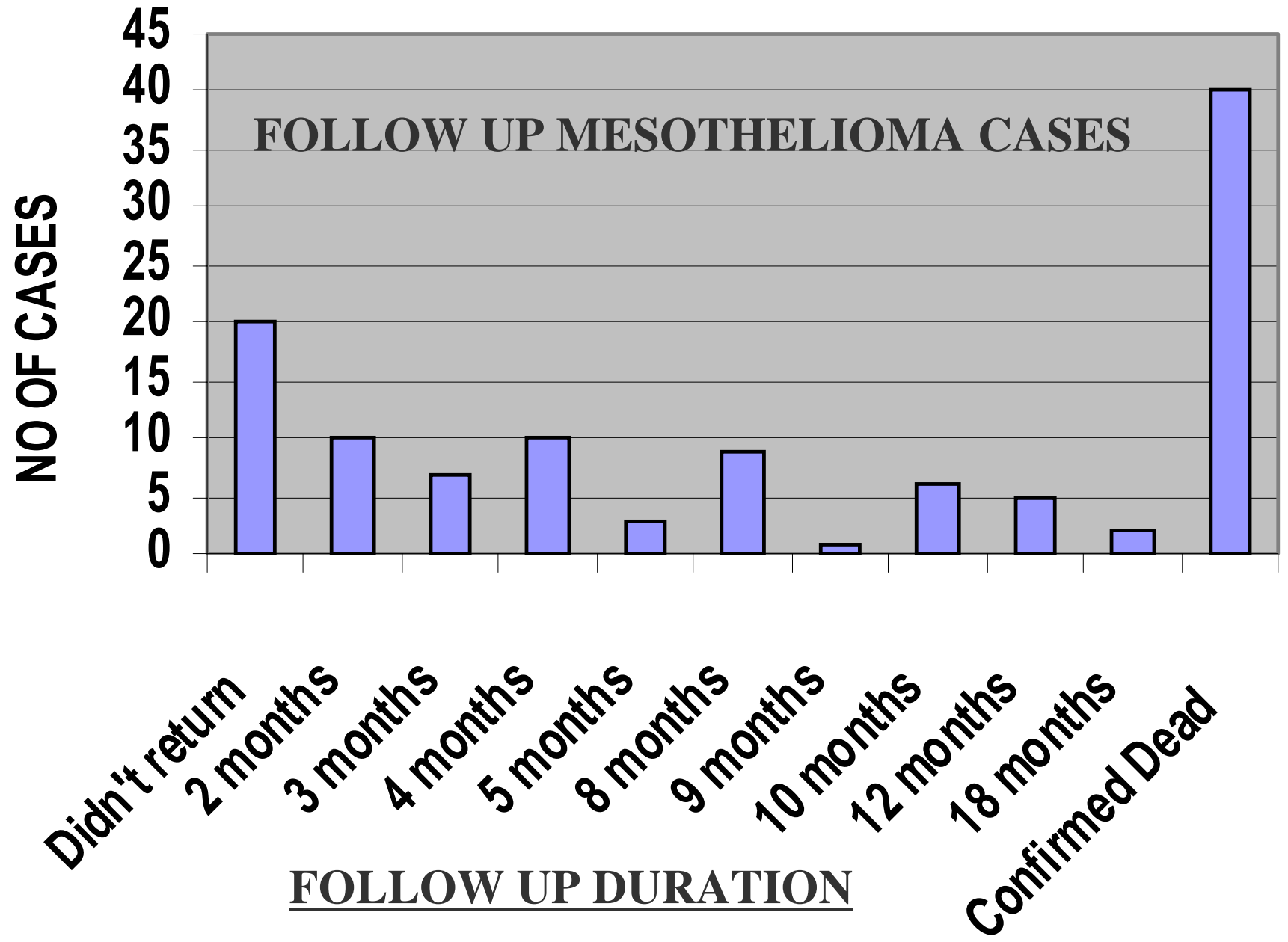
**TABLE 4: MORTALITY AND MORBIDITY RATE OF OCCUPATIONAL GROUP IN ASBESTOS MILLING AND MANUFACTURING UNITS IN NWFP (1995-2003).**

S.N	Location	Type of Industry	No of workers	Age	No of workers suffering from various lung diseases			
					Lung cancer	Asthema	Mesothelion	(Sick) But N.D
1	<b>Sari Killi Mohmand Agency</b>	Asbestos, Soap Stone and Qtz grinding unit	11	20-35	2	2	1	2
2	<b>Newe Killi Mohmand Agency</b>	Asbestos& Talc grinding unit	9	15-55	1	1	2	3
3	<b>Hyder colony Peshawar city</b>	Asbestos grinding & product manufacturing Unit	6	16-65	1	2	1	1
4	<b>kakshal (Qasim Abad) peshawar</b>	Asbestos grinding & product manufacturing Unit	8	20-40		1		3
5	<b>Main Bazar, Mardan</b>	Asbestos product manufacturing unit	4	20-70				
			<b>Total=34</b>		<b>Total=4</b>	<b>Total=6</b>	<b>Total=4</b>	<b>Total=9</b>

# PLEURAL BIOPSY



- Malignant Mesothelioma
- Atypical Mesothelial Hyperplasia



# CONCLUSION

- The epidemiological data collected from various asbestos mines, crushing, grinding and product manufacturing units of local and imported asbestos indicate that the occupational and para-occupational groups are at higher risk from asbestos hazards in Pakistan, particularly in North Pakistan.
- The intensity of malignant mesothelioma among the occupational and para-occupational groups clearly demonstrates that it may take the shape of an epidemic in the near future in Pakistan.

# RECOMMENDATIONS

- Pakistan Environmental Act and Health Policy should be revised to build in hazard mitigations in relation to health risks of asbestos.
- Awareness programmes must be launched regarding the environmental and health hazards of asbestos throughout Pakistan .
- Workers in asbestos industrial units should be properly trained and made well aware of asbestos hazards.
- Strict precautionary measurements and engineering controls must be adopted to control and reduce the emission of airborne asbestos fibers in indoor and outdoor environments.
- If possible, further use of asbestos may be banned in Pakistan.