

Yabrud Village Profile



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Background

This report is part of a series of booklets, which contain compiled information about each city, village, and town in the Ramallah Governorate. These booklets came as a result of a comprehensive study of all villages in Ramallah Governorate, which aims at depicting the overall living conditions in the governorate and presenting developmental plans to assist in developing the livelihood of the population in the area. It was accomplished through the "Village Profiles and Needs Assessment;" the project funded by the Spanish Agency for International Cooperation for Development (AECID).

The "Village Profiles and Needs Assessment" was designed to study, investigate, analyze and document the socio-economic conditions and the needed programs and activities to mitigate the impact of the current unsecure political, economic and social conditions in the Ramallah Governorate.

The project's objectives are to survey, analyze, and document the available natural, human, socioeconomic and environmental resources, and the existing limitations and needs assessment for the development of the rural and marginalized areas in the Ramallah Governorate. In addition, the project aims at preparing strategic developmental programs and activities to mitigate the impact of the current political, social, and economic instability with the focus on the agricultural sector.

All village profiles in Arabic and English are available online at <http://vprofile.arij.org>.

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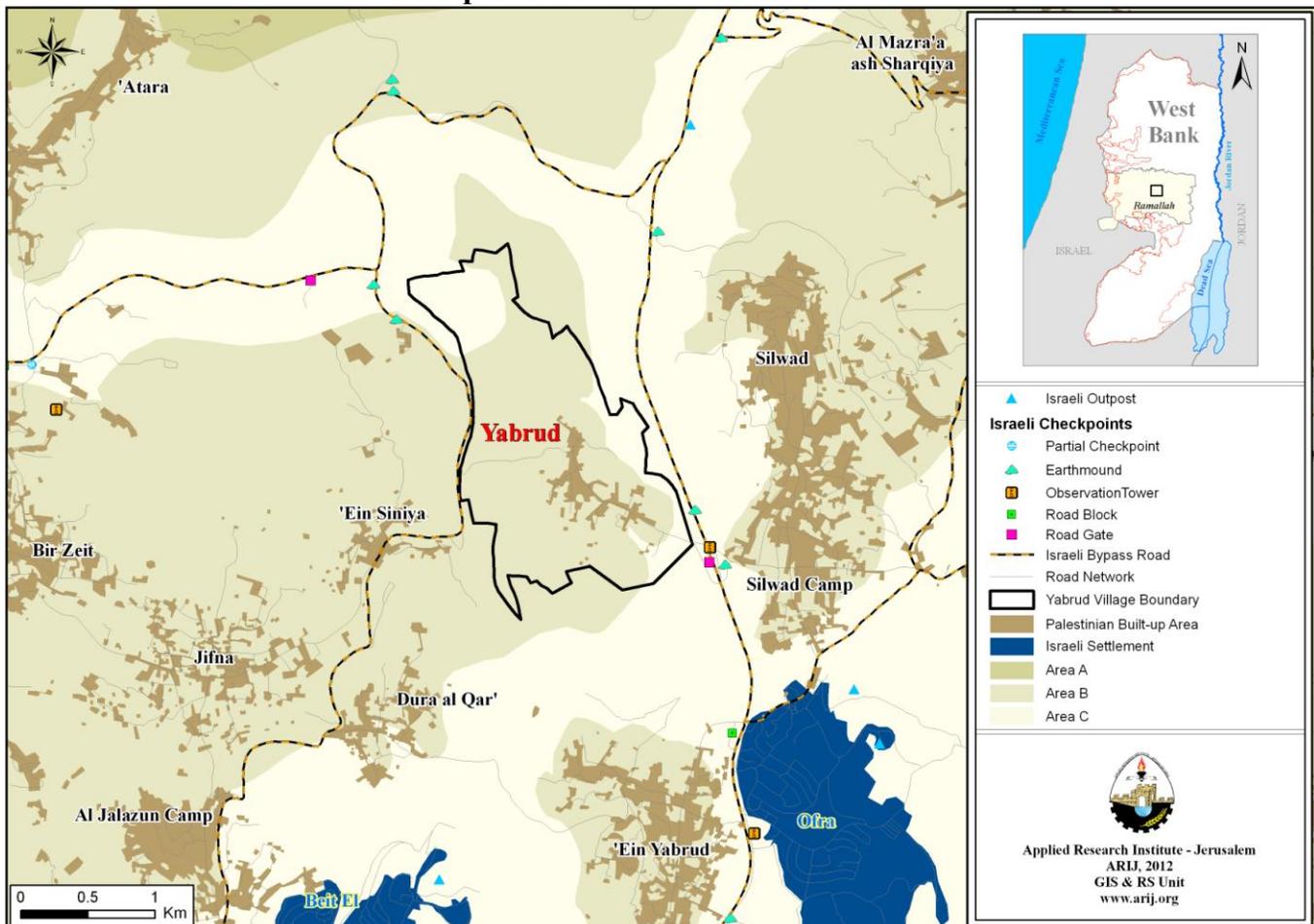
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Yabrud Village Profile

Location and Physical Characteristics

Yabrud is a Palestinian village in the Ramallah Governorate located 8.7km northeast of Ramallah City. Yabrud is bordered by Silwad town to the east and north, 'Ein Siniya village to the west, and Silwad town and 'Ein Yabrud village territories to the south (ARIJ GIS Unit, 2012) (See Map 1).

Map 1: Yabrud location and borders



Source: ARIJ - GIS Unit, 2012.

Yabrud is located at an altitude of 774m above sea level with a mean annual rainfall of 539.2mm. The average annual temperature is 16°C and the average annual humidity is approximately 60% (ARIJ GIS Unit, 2012).

Since 1996, Yabrud has been governed by a village council included within the Joint Services Council of 'Ein Yabrud, Beitin and Burqa. The Village Council is currently administrated by 5 members

appointed by the Palestinian National Authority. The village council owns a permanent headquarters but does not own a vehicle for the collection of solid waste (Yabrud Village Council, 2011).

It is the responsibility of the village council to provide a number of services to the residents of Yabrud, including (Yabrud Village Council, 2011):

1. Infrastructure services, such as water and electricity provision and management.
2. Solid waste collection, road construction and restoration, street cleaning, and social services.
3. Protection of historical and archeological sites in the village.
4. Protection of governmental properties.

History

Yabrud village was named after An Namrood, an influential man who lived in the village. The current village residents are descended from the native inhabitants of the village (Yabrud Village Council, 2011) (See photo below for Yabrud village).

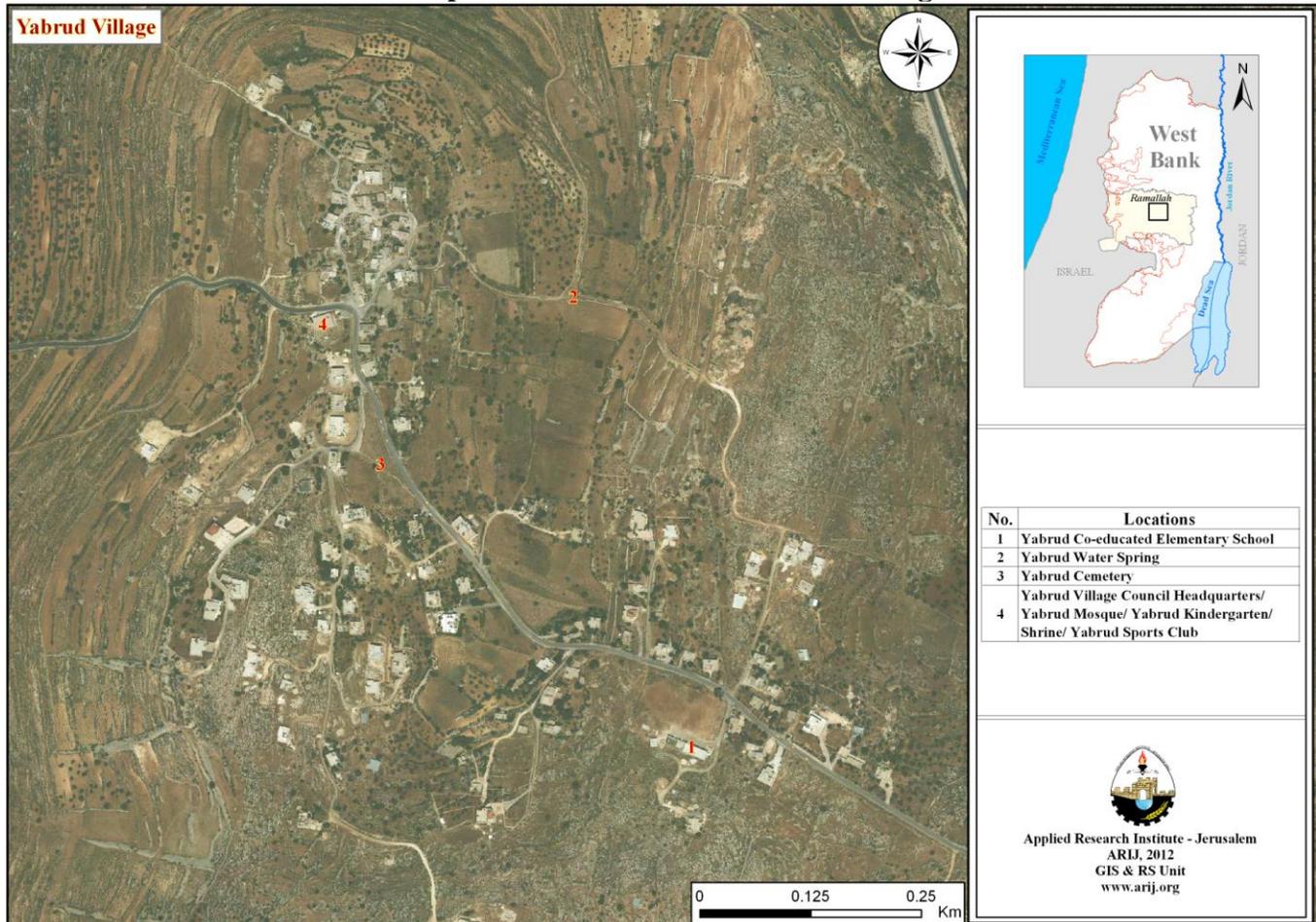
Photos of Yabrud



Religious and Archaeological Sites

There is one mosque (Yabrud Mosque) in the village. There are several ancient shrines of archaeological interest (Yabrud Village Council, 2011) (See Map 2).

Map 2: Main locations in Yabrud Village



Source: ARIJ - GIS Unit, 2012.

Population

According to the Palestinian Central Bureau of Statistics (PCBS), the total population of Yabrud in 2007 was 606, of whom 317 were male and 289 female. There were 111 households living in 136 housing units.

Age Groups and Gender

The General Census of Population and Housing carried out by PCBS in 2007 showed the distribution of age groups in Yabrud was as follows: 35.8% were less than 15 years of age, 51% were between 15 - 64 years of age, and 4.1% were 65 years old or older. Data additionally showed that the sex ratio of males

to females in the village is 109.7:100, meaning that males and females constitute 52.3% and 47.7% of the population respectively.

Families

Yabrud residents are from several families, mainly the 'Ammar, Hadeed, Daood and Mashriqi families (Yabrud Village Council, 2011).

Immigration

The field survey conducted by the ARIJ team shows that around 40 persons have left the village since the Al Aqsa Intifada in 2000 (Yabrud Village Council, 2011).

Education

According to the results of the PCBS Population, Housing and Establishment Census-2007, the illiteracy rate among Yabrud population was approximately 7.4%, of whom 63.3% were females. Of the literate population, 9.4% could only read and write, with no formal education 17.6% had elementary education, 26.1% had preparatory education, 26.6% had secondary education, and 12.9% completed higher education. Table 1 shows the educational level in the village of Yabrud by sex and educational attainment in 2007.

Table 1: Yabrud population (10 years old and over) by sex and educational attainment

Sex	Illiterate	Can read & write	Elementary	Preparatory	Secondary	Associate Diploma	Bachelor	Higher Diploma	Master	PhD	Unknown	Total
M	11	18	39	58	57	11	22	1	-	-	-	217
F	19	20	32	47	50	12	5	-	1	-	-	186
T	30	38	71	105	102	23	27	1	1	-	-	403

Source: PCBS, 2009.

There is one governmental co-educated school in the village, Yabrud Co-educational Elementary School which is run by the Palestinian Ministry of Higher Education (MoHE). There are no kindergartens in the village (Directorate of Education in Ramallah, 2011).

In the village there are 146 students, 10 teachers, and 7 classes (Directorate of Education in Ramallah, 2011). The average number of students per teacher in the school is nearly 15, while the average number of students per class is approximately 21.

Due to the lack of secondary schools for males and females in the village, students from Yabrud village attend Silwad village's schools, 3km from Yabrud (Yabrud Village Council, 2011).

Health Status

There are no health facilities or services available in Yabrud village. Therefore residents of Yabrud go to Silwad Health Center in Silwad town or to Ramallah Governmental Hospital in Ramallah city, 2km and 13km from the locality respectively (Yabrud Village Council, 2011). In addition to the lack of health facilities in the locality, the village has no ambulance to assist patients in emergencies (Yabrud Village Council, 2011).

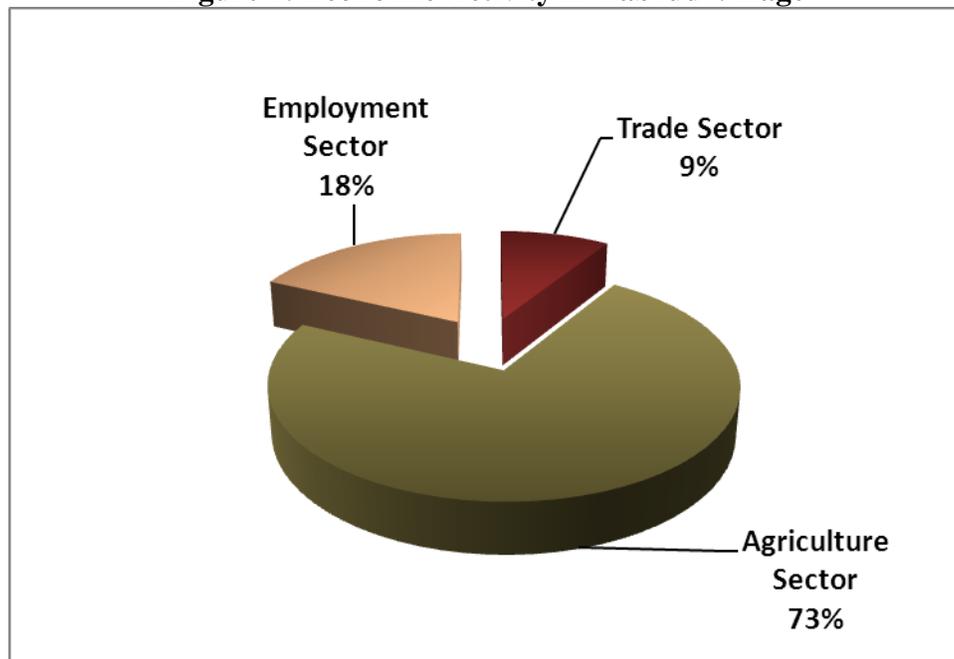
Economic Activities

The economy in Yabrud is dependent on several economic sectors, mainly the agriculture sector which absorbs 73% of the village workforce (See Figure1).

The results of a field survey conducted by the ARIJ team in 2011 for the distribution of labor by economic activity in Yabrud are as follows:

- Agriculture Sector (73%)
- Government or Private Employees Sector (18%)
- Trade Sector (9%)

Figure 1: Economic Activity in Yabrud Village



Source: Yabrud Village Council, 2011

There are no industrial facilities in Yabrud. However, there is one grocery and two service stores. The unemployment rate in Yabrud reached around 5% in 2011 (Yabrud Village Council, 2011), and it was shown

that the social group most affected by Israeli procedures was workers in the agricultural sector (Yabrud Village Council, 2011).

Labor Force

According to the PCBS Population, Housing and Establishment Census-2007, 28.5% of the Yabrud labor force was economically active, of whom 84.3% were employed, and 71.5% were not economically active, 53.1% were students, and 34.7% were housekeepers (See Table 2).

Table 2: Yabrud population (10 years and above) by sex and employment status-2007

SEX	Economically Active				Not Economically Active						Un-known	Total
	Employed	Currently Unemployed	Unemployed (Never worked)	Total	Students	House-keeping	Unable to work	Not working & Not looking for work	Other	Total		
M	91	4	12	107	89	-	14	6	1	110	-	217
F	6	-	2	8	64	100	11	3	-	178	-	186
T	97	4	14	115	153	100	25	9	1	288	-	403

Source: PCBS, 2009.

Agricultural Sector

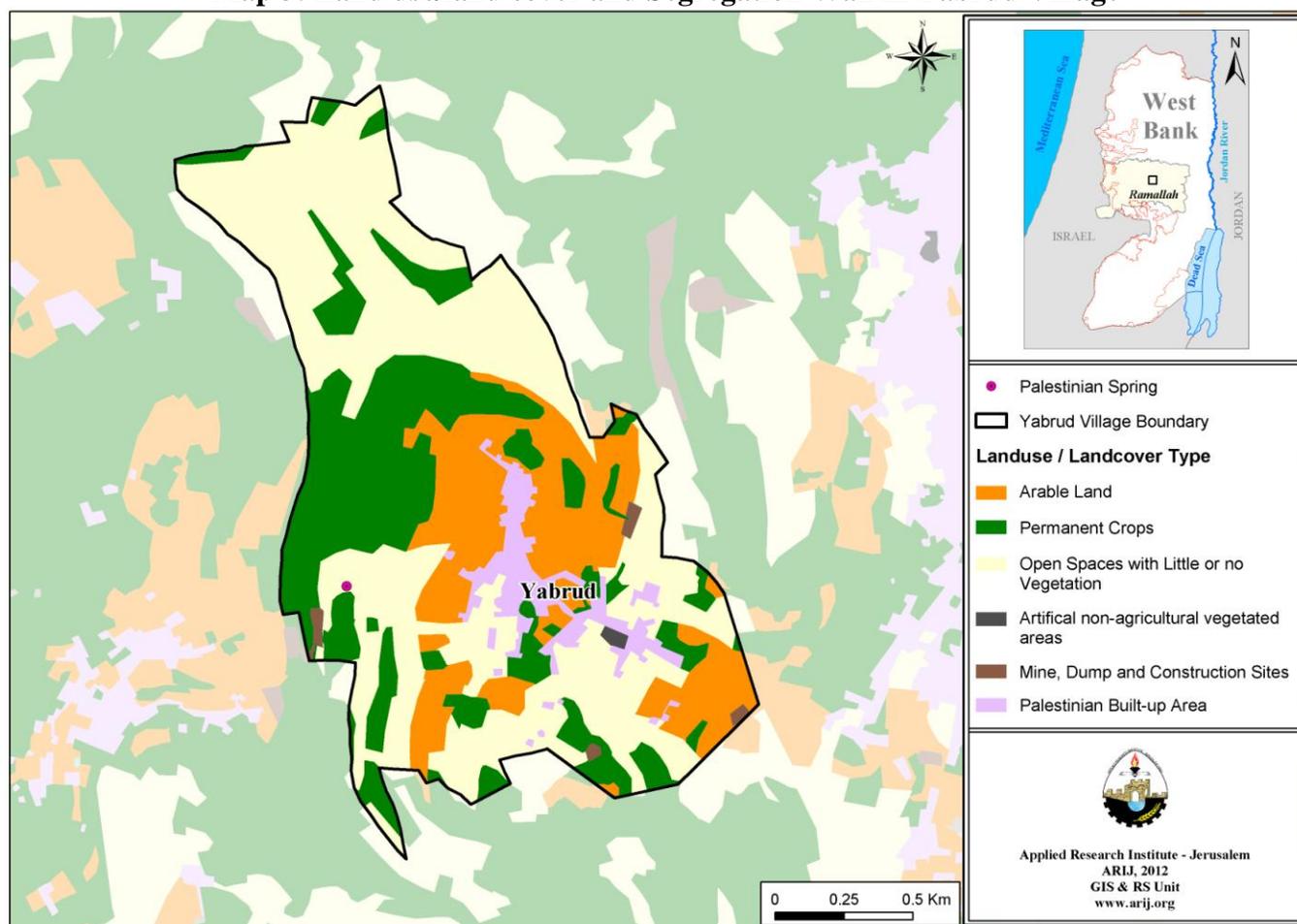
Yabrud has a total area of around 2,761 dunums of which 1,284 are 'arable' land and 148 dunums are registered as 'residential' (See Table 3 and Map 3).

Table 3: Land use and land cover in Yabrud village in 2010 (area in dunum)

Total Area	Built up Area	Agricultural area (1,284)				Inland water	Forests	Open Spaces	Area of Industrial, Commercial & Transport Unit	Area of Settlements, Military Bases & Wall Zone
		Permanent Crops	Green-houses	Range-lands	Arable lands					
2,761	148	725	0	0	559	0	0	1,307	22	0

Source: ARIJ – GIS Unit, 2012.

Map 3: Land use/land cover and Segregation Wall in Yabrud Village



Source: ARIJ - GIS Unit, 2012.

Table 4 shows the different types of rain-fed and irrigated open-cultivated vegetables in Yabrud. The most commonly cultivated crop within this area is tomatoes.

Table 4: Total area of rain-fed and irrigated open cultivated vegetables in Yabrud village (dunum)

Fruity vegetables		Leafy vegetable		Green legumes		Bulbs		Other vegetables		Total Area	
RF	Irr.	RF	Irr.	RF	Irr.	RF	Irr.	RF	Irr.	RF	Irr.
16	0	0	0	8	0	5	0	0	6	29	6

Rf: Rain-fed, Irr: Irrigated

Source: Palestinian Ministry of Agriculture, 2009

Table 5 shows the different types of fruit trees planted in the area. Yabrud is famous for olive cultivation; there are 490 dunums of land planted with olive crops.

Table 5: Total area of fruit and olive trees in Yabrud Village (dunum)

Olives		Citrus		Stone-fruits		Pome fruits		Nuts		Other fruits		Total Area	
Rf	Irr.	Rf	Irr.	Rf	Irr.	Rf	Irr.	Rf	Irr.	Rf	Irr.	Rf	Irr.
490	0	0	0	7	0	0	0	20	0	75	0	592	0

Rf: Rain-fed, Irr: Irrigated

Source: Palestinian Ministry of Agriculture, 2009

In terms of field crops and forage in Yabrud, cereals (in particular wheat) are the most cultivated, covering an area of about 105 dunums (See Table 6).

Table 6: Total area of field crops in Yabrud village (dunum)

Cereals		Bulbs		Dry legumes		Oil crops		Forage crops		Stimulating crops		Other crops		Total Area	
Rf	Irr	Rf	Irr	Rf	Irr	Rf	Irr	Rf	Irr	Rf	Irr	Rf	Irr	Rf	Irr
105	0	13	0	40	0	5	0	25	0	0	0	0	0	188	0

Rf: Rain-fed, Irr: Irrigated

Source: Palestinian Ministry of Agriculture, 2009

The difference between the two sets of results obtained from the Ministry of Agriculture and by ARIJ's GIS Unit in sizes of agricultural areas is explained by the fact that the Ministry of Agriculture and the Palestinian Central Bureau of Statistics (2010) conducted a survey which used a definition of agricultural areas based on land ownership. Therefore, the areas included in the survey were those of actual holdings of agricultural areas instead of seasonal ones. The survey did not consider fragmented and small seasonal cultivated areas in residential and agricultural areas. ARIJ's survey, however, indicated the existence of a high proportion of small and fragmented holdings (home gardens) throughout the occupied Palestinian territories, thus accounting for the larger area of agricultural holdings calculated by ARIJ.

The field survey conducted by ARIJ team in 2011 shows that 14% of the residents in Yabrud rear and keep domestic animals such as sheep and goats (See Table 7).

Table 7: Livestock in Yabrud village

Cows*	Sheep	Goats	Camels	Horses	Donkeys	Mules	Broilers	Layers	Bee Hives
7	115	206	0	0	0	0	3,200	0	0

* Including cows, bull calves, heifer calves and bulls

Source: Palestinian Ministry of Agriculture, 2009

There are around 5 kilometers of agricultural roads in the village, divided as follows:

Table 8: Agricultural Roads in Yabrud Village and their Lengths

Suitability of Agricultural Roads	Length (km)
For vehicles	-
For tractors and agricultural machinery only	3
For animals only	-
Unsuitable	2

Source: Yabrud Village Council, 2011

The agricultural sector in the village faces some obstacles and problems, mainly (Yabrud Village Council, 2011):

- The lack of employment.
- The lack of capital.
- The lack of economic feasibility.
- The lack of water resources.
- The high cost of feed.
- The low quality of water.

Institutions and Services

Yabrud village has no governmental institutions; however, it has a number of local institutions that provide services to various sectors of society. These include (Yabrud Village Council, 2011):

- **Yabrud Village Council:** Founded in 1996 by the Ministry of Local Government with the goal of taking care of all the issues in the village and providing various services to its population.
- **Yabrud Sports Club:** Founded in 2005 by the Ministry of Sports & Youth with an interest in sports and cultural activities for young people.
- **Yabrud Women Club:** Founded in 1995 by the Agricultural Relief with the aim of providing agricultural guidance.
- **The Agricultural Relief:** Founded in 1995 by the Ministry of Agriculture with the aim of providing the village residents with agricultural assistance.

Infrastructure and Natural Resources

Electricity and Telecommunication Services:

Yabrud has been connected to a public electricity network since 1979. It is served by Jerusalem Electricity Company, which is the main source of electricity in the village. Approximately 90% of the housing units in the village are connected to the network. However, the village residents suffer some problems concerning electricity, mainly (Yabrud Village Council, 2011):

1. The damaged network.
2. The lack of an electricity transformer to cover the whole village's housing units.

Furthermore, Yabrud is connected to a telecommunication network and approximately 100% of the housing units within the village boundaries are connected to phone lines (Yabrud Village Council, 2011).

Transportation Services:

15 taxis and two buses form the main means of transportation in Yabrud village (Yabrud Village Council, 2011). There are 7km of main roads and 3km of secondary roads (See Table 9) (Yabrud Village Council, 2011).

Table 9: Roads in Yabrud village

Status of Internal Roads	Road Length (km)	
	Main	Sub
1. Paved & in good condition	2	2
2. Paved but in poor condition	2	1
3. Unpaved	3	-

Source: Yabrud Village Council, 2011

Water Resources:

Yabrud is provided with water by Jerusalem Water Authority through the public water network established in 1973. Approximately 90% of the housing units are connected to this network (Yabrud Village Council, 2011). The quantity of water supplied to Yabrud in 2010 was approximately 14,840 cubic meters/ year (Jerusalem Water Authority, 2011); therefore, the average rate of water supply per capita in Yabrud is 67 liters per day. However, no Yabrud citizen consumes this amount of water due to water losses, which are recorded at around 26.5%. These losses happen at the main source, major transport lines, in the distribution network, and at the household level. Therefore the rate of water consumption per capita in Yabrud is 49.3 liters per day (Jerusalem Water Authority, 2011). The rate experienced by Yabrud residents is low compared with the minimum quantity of 100 liters proposed by the World Health Organization.

Household harvesting cisterns, of which there are 40 in the village, form an alternative water resource (Yabrud Village Council, 2011). A water spring known as Yabrud Spring with an average pumping rate of 4 cubic meters is also located in the village and is used daily by residents (Yabrud Village Council, 2011).

To determine water costs, the water authority has adopted an upward rate where the price of water increases with increasing consumption. Table 10 shows the price of water by category of consumption.

Table 10: Water tariffs of Jerusalem Water Authority adopted since 01.01.2012

Consumption Category (m ³)	Domestic (NIS/m ³)	Industrial (NIS/m ³)	Tourist (NIS/m ³)	Commercial (NIS/m ³)	Public Institutions (NIS/m ³)
0 – 5	4.5	5.6	5.6	5.6	5.4
5.1 – 10	4.5	5.6	5.6	5.6	4.5
10.1 – 20	5.6	6.8	6.8	6.8	5.6
20.1 – 30	6.8	8.1	8.1	8.1	6.8
30.1+	9	9.9	10.8	9	9

Source: Jerusalem Water Authority, 2012

Sanitation:

Yabrud lacks a public sewerage network, with most of the village residents using cesspits for the disposal of wastewater (Yabrud Village Council, 2011).

Based on the estimated daily per capita water consumption, the estimated amount of wastewater generated per day is approximately 24 cubic meters, or 8,726 cubic meters annually. At the individual level in the village it is estimated that the per capita wastewater generation is 34.5 liters per day, depending on the consumption rate. The wastewater collected by cesspits is discharged by wastewater tankers directly to open areas or nearby valleys with no regard for the environment. There is no wastewater treatment either at the source or at the disposal sites and this poses a serious threat to both environmental and public health (ARIJ-WERU, 2012).

Solid Waste Management:

Yabrud Village Council is responsible for managing the collection and disposal of solid waste generated by citizens and establishments in the village. As the process of solid waste management is costly, a monthly fee of 20 NIS is charged to the population served by domestic solid waste collection and transportation services. However, the collected fees are not considered sufficient for a good management of solid waste and only 55% of these fees are collected from the citizens (Yabrud Village Council, 2011).

Most of the population in Yabrud benefit from the solid waste services, whereby waste is collected from households, institutions, shops, and public squares in plastic bags. The Village Council then collects the solid waste once a week and transports it through a tractor (rented from an external operator) to the village's dumping site, 2km from the locality, where it is burnt or buried (Yabrud Village Council, 2011).

The daily per capita rate of solid waste production in Yabrud is 0.7kg. Thus the estimated amount of solid waste produced per day from the Yabrud residents is nearly 0.4 tons, or 154.8 tons per year (ARIJ WERU, 2012).

Environmental Conditions

Like other towns and villages in the governorate, Yabrud experiences several environmental problems which must be addressed and solved. These problems can be identified as follows:

Water Crisis

- Water is cut off by the Jerusalem Water Department for long periods of time in several neighborhoods of the village for several reasons:
 - (1) Israeli control over Palestinian water resources; consequently, the Jerusalem Water Department purchases water from Israeli companies to satisfy residents' water needs.

- (2) High rate of water losses, because the water network is old and in need of rehabilitation and renovation.
- The lack of a public reservoir in the village to cover the residents' water needs during water cut-offs.

Wastewater Management

- The absence of a public sewage network means that Yabrud residents are forced to use unhygienic cesspits for the disposal of wastewater, and/or to discharge wastewater in the streets. This is particularly common in winter, as citizens cannot afford the high cost of sewage tankers during this period. These methods facilitate environmental damage, health problems, and the spread of epidemics and diseases in the village. This wastewater also contaminates the groundwater because most cesspits are built without lining, allowing wastewater to enter into the ground and avoiding the need to use sewage tankers. Moreover, the untreated wastewater collected from cesspits by sewage tankers is disposed of in open areas without concern for the damage it causes to the environment and to residents' health.

Solid Waste Management:

- The lack of a central sanitary landfill to serve Yabrud and the other neighboring communities in the governorate is due mainly to the obstacles created by the Israeli authorities for local and national institutions in granting licenses to establish such a landfill, because the appropriate land is within Area C and under Israeli control. Additionally, the implementation of such projects depends on funding from donor countries. The lack of a sanitary landfill is a source of pollution to the groundwater and soil through the leachate produced from the solid waste, and produces bad odors and distortion of the landscape.

Impact of the Israeli Occupation

Geopolitical Status of Yabrud Village

According to the Oslo II Interim Agreement signed on 28th September 1995 between the Palestinian Liberation Organization (PLO) and Israel, Yabrud was divided into areas 'B' and 'C'. Approximately 2,193 dunums (79.4% of the total village area) were assigned as Area 'B', where the Palestinian National Authority (PNA) has complete control over civil matters but Israel continues to have overriding responsibility for security. Area 'B' constitutes most of the inhabited Palestinian areas, including municipalities, villages, and some camps. Most of the village's population resides in Area 'B' which constitutes a very small area in comparison to the total area of the village. Approximately 568 dunums (20.6% of the total village area) is classified as Area 'C', where Israel retains full control over security and administration. In Area 'C' Palestinian building and land management is prohibited unless through a permit given by the Israeli Civil Administration. Most of the lands lying within Area 'C' are agricultural and open spaces (Table 11).

Table 11: The geopolitical divisions of Yabrud village according to the Oslo II interim agreement in 1995

Area	Area in dunums	Percent of Total village area
Area A	0	0
Area B	2,193	79.4
Area C	568	20.6
Nature Reserve	0	0
Total	2,761	100

Source: ARIJ-GIS Unit, 2012

Development Plans and Projects

Implemented Projects

Yabrud village council has implemented very few development projects in Yabrud during the past five years (See Table 12).

Table 12: Implemented Development Plans and Projects in Yabrud during the Last Five Years

Name of the Project	Type	Year	Donor
Construction of three classrooms	Construction/ Educational	2009	Ministry of Finance

Source: Yabrud Village Council, 2011

Proposed Projects

Yabrud Village Council, in cooperation with the civil society organizations in the village and the village residents, hope to implement several projects in the coming years. The project ideas were developed during the PRA workshop conducted by ARIJ staff in the village. The projects are as follows, in order of priority from the perspectives of the participants in the workshop:

1. Expanding the electricity network by 2 km in order to reach new buildings in the village outskirts, and rehabilitating and maintaining the existing network (3 km), in addition to providing street lighting on main roads.
2. Extending the public water network by 2 km to be connected to all housing units of the village and rehabilitating the existing network (5 km).
3. Constructing a public services building to include the village council, the youth club, the women's club, a meeting room, a health center and a kindergarten.
4. Rehabilitating 2 km of the main road (expansion, pavement, sidewalks, and lighting) and rehabilitating 5 km of sub-roads (expansion, pavement) in addition to constructing new sub roads (5 km).
5. Rehabilitating 1 km of Aqaba Road, which links Yabrud and 'Ein Siniya (pavement, expansion, reflectors, sidewalks).
6. Constructing 10 km of agricultural roads.

7. Creating small productive development projects to help needy families in the village, such as: greenhouses, beehives, sheep farms, embroidery, poultry farms, equipments to exploit their agricultural lands, and household agricultural harvesting cisterns along with the establishment of home gardens and others.
8. Establishing a sewage network (8.5 km) to be connected to all housing units in the village.
9. Providing reclamation projects of agricultural lands (300 dunums) and supplying them with water-harvesting cisterns and olive and stone-fruit trees.
10. Establishing a public park for children.
11. Restoring the village's main water spring and assisting in the rehabilitation of ancient Roman wells in the village (25 wells).
12. Restoring and rehabilitating old houses, shrines, and archeological sites in the village.
13. Constructing an alternative road to Aqaba road connecting Yabrud with 'Ein Siniya village; to be eligible and prevents drivers the risk of accidents.

Locality Development Priorities and Needs

Yabrud suffers from a significant shortage of infrastructure and services. Table 13 shows the development priorities and needs in the village from the village council's point of view (Yabrud Village Council, 2011).

Table 13: Development Priorities and Needs in Yabrud

No.	Sector	Strongly Needed	Needed	Not a Priority	Notes
Infrastructural Needs					
1	Opening and Pavement of Roads	*			16km [^]
2	Rehabilitation of Old Water Networks	*			5km
3	Extending the Water Network to Cover New Built up Areas	*			2km
4	Construction of New Water Networks			*	
5	Rehabilitation/ Construction of New Wells or Springs	*			rehabilitating the water spring
6	Construction of Water Reservoirs	*			100m ³
7	Construction of a Sewage Disposal Network	*			5km
8	Construction of a New Electricity Network	*			7km
9	Providing Containers for Solid Waste Collection	*			50 containers
10	Providing Vehicles for Collecting Solid Waste	*			1
11	Providing a Sanitary Landfill	*			
Health Needs					
1	Building of New Clinics or Health Care Centres	*			health clinic
2	Rehabilitation of Old Clinics or Health Care Centres			*	
3	Purchasing of Medical Equipment and Tools			*	
Educational Needs					
1	Building of New Schools	*			1 st - 10 th grades
2	Rehabilitation of Old Schools	*			
3	Purchasing of New Equipment for Schools	*			
Agriculture Needs					
1	Rehabilitation of Agricultural Lands	*			100 dunums
2	Building Rainwater Harvesting Cisterns	*			20 cistern
3	Construction of Barracks for Livestock			*	
4	Veterinary Services	*			
5	Seeds and Hay for Animals	*			50 tons per year
6	Construction of New Greenhouses	*			6 greenhouses
7	Rehabilitation of Greenhouses			*	
8	Field Crops Seeds			*	
9	Plants and Agricultural Supplies	*			

[^] 4km are main roads, 1km is a sub road and 11km are agricultural roads.

Source: Yabrud Village Council, 2011.

References:

- *Applied Research Institute - Jerusalem (ARIJ)*, 2012. Geographic Information Systems and Remote Sensing Unit Database. Bethlehem - Palestine.
- *Applied Research Institute - Jerusalem (ARIJ)*, 2012. *Geographic Information Systems and Remote Sensing Unit; Land Use Analysis (2010) – Half Meter High Accuracy*. Bethlehem - Palestine.
- *Applied Research Institute - Jerusalem (ARIJ)*. 2012. Water & Environment Research Unit Database (WERU). Bethlehem - Palestine.
- *Jerusalem Water Authority (for Ramallah & Al Bireh areas)* (2011). Detection showing the amount of water sold from 1/1/2010 till 31/12/2010. Ramallah – Palestine.
- *Jerusalem Water Authority* (2012). Jerusalem Water Authority's Website; Data Retrieved on the first of March. <http://www.jwu.org/newweb/atemplate.php?id=87>.
- *Ministry of Education & Higher Education (MOHE)* - Ramallah, 2011. Directorate of Education; A database of schools (2010/2011). Ramallah – Palestine.
- *Palestinian Central Bureau of Statistics*. 2009. Ramallah, Palestine: General Census of Population and Housing Censuses, 2007.
- *Palestinian Ministry of Agriculture (MOA)*, 2010. Directorate of Agriculture data (2009/2010). Ramallah - Palestine.
- *Yabrud Village Council*, 2011.