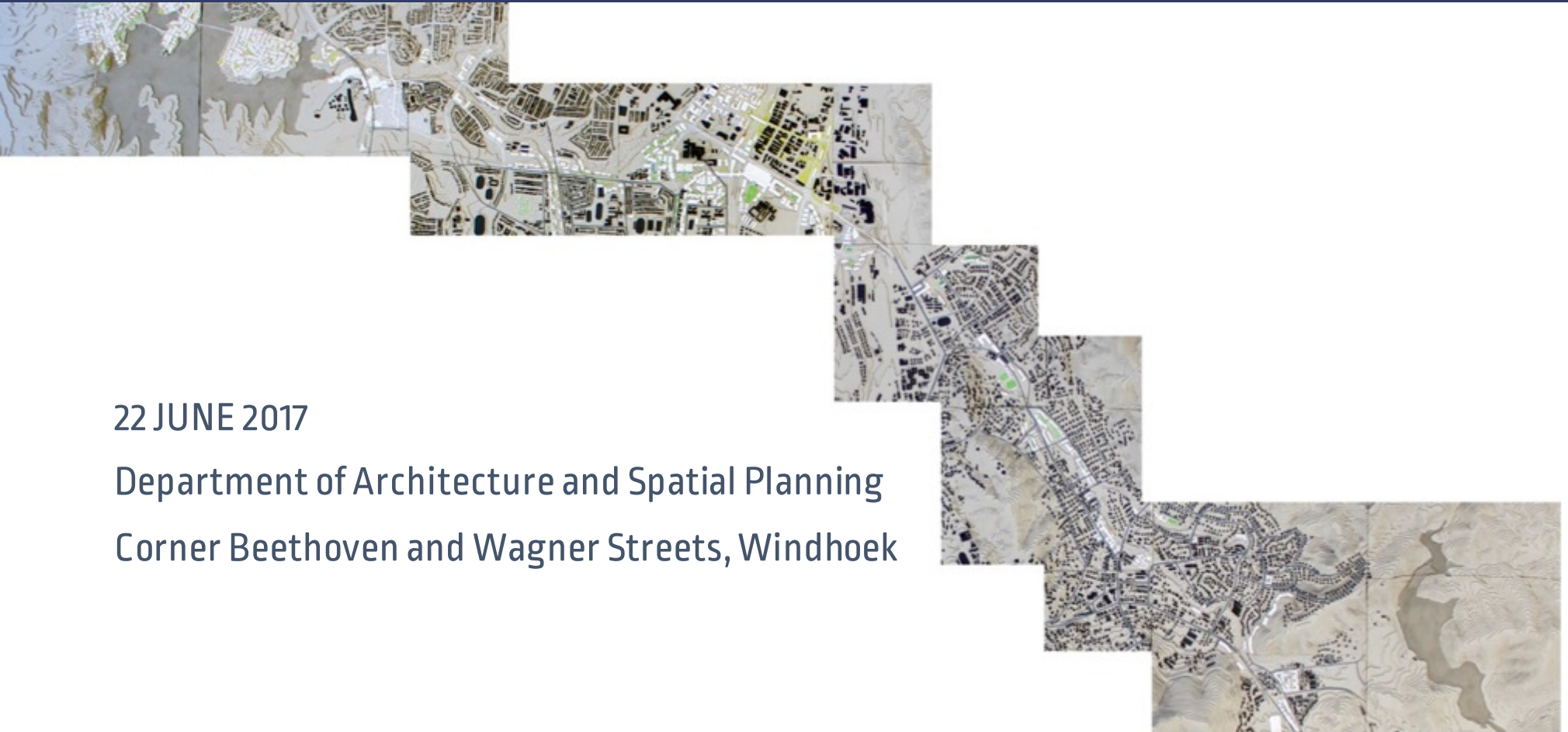




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OF SCIENCE AND TECHNOLOGY

Integrated Land Management Institute (ILMI)

URBAN INFILL HOUSING OPPORTUNITIES IN WINDHOEK



22 JUNE 2017

Department of Architecture and Spatial Planning
Corner Beethoven and Wagner Streets, Windhoek



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Presentation Outline

1. Introduction: the Housing Challenge in Windhoek
2. Target groups: Teachers (Public Sector Workers) and Domestic Workers
3. Windhoek's Open Space Network and Opportunities for Residential
Densification
4. Urban Infill Affordable Housing
5. Proposed NUST / CoW partnership for Innovative Housing Solutions
6. Urban Transformation: Student Works
7. Discussion



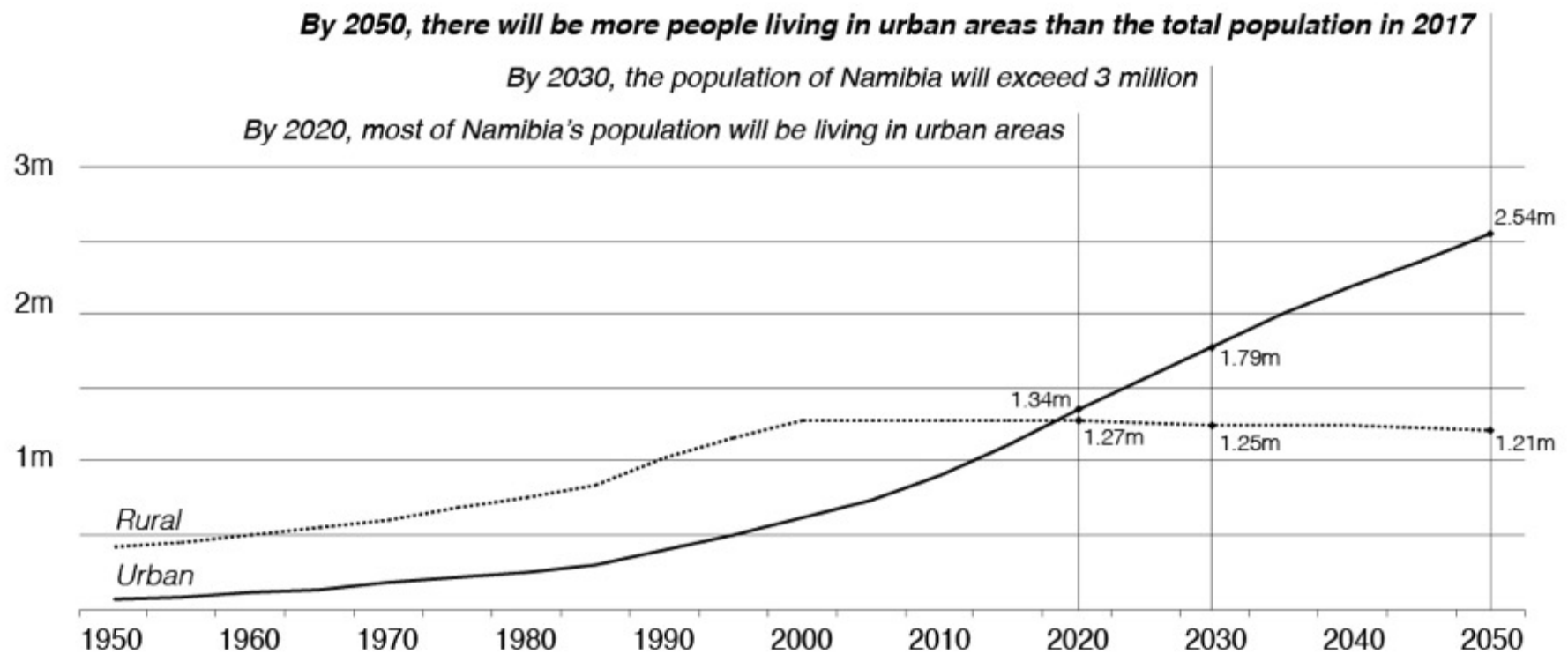
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1. INTRODUCTION: THE HOUSING CHALLENGE IN WINDHOEK

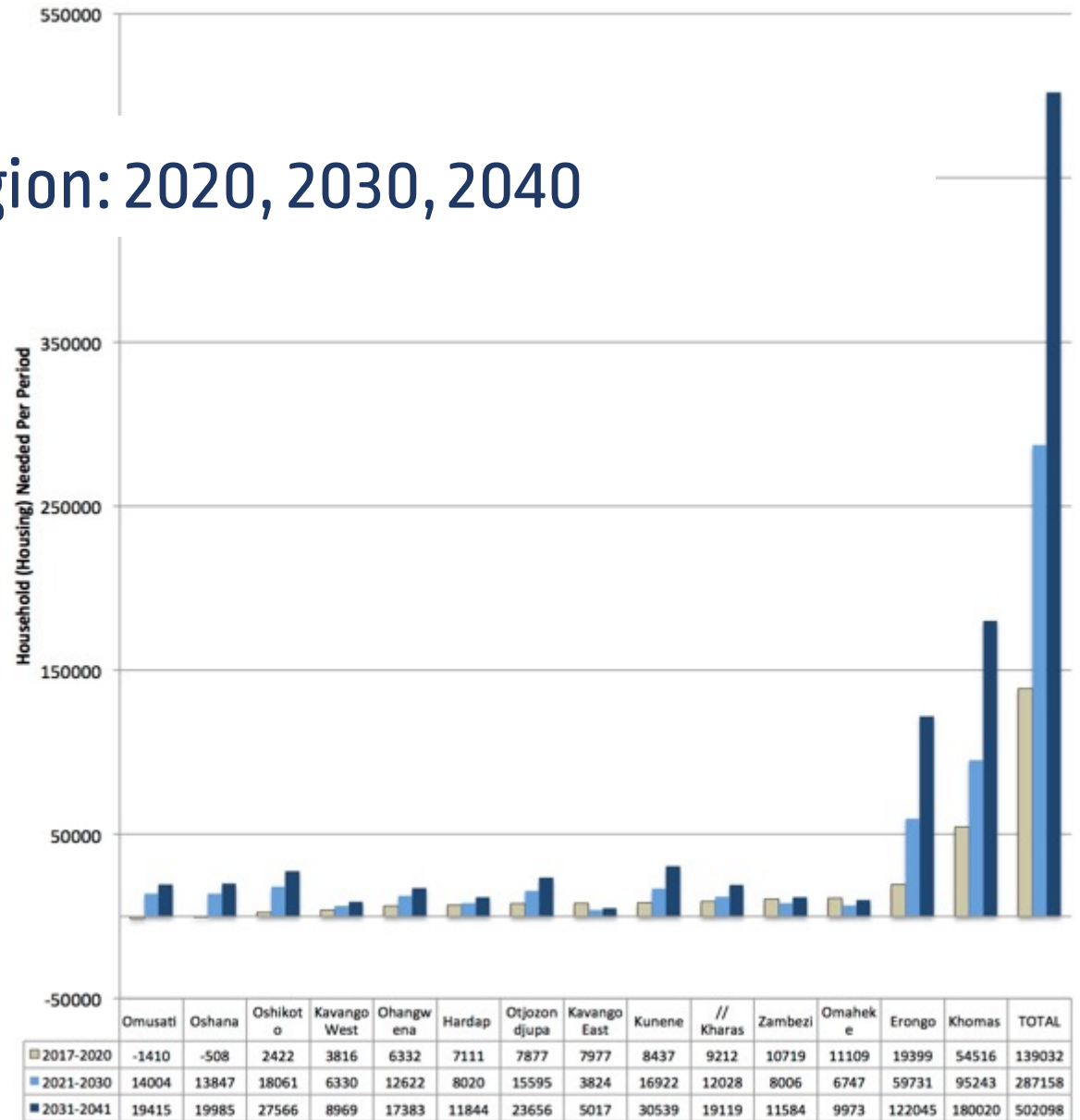


Namibia's Rapid Urbanization Rate: 1950-2050

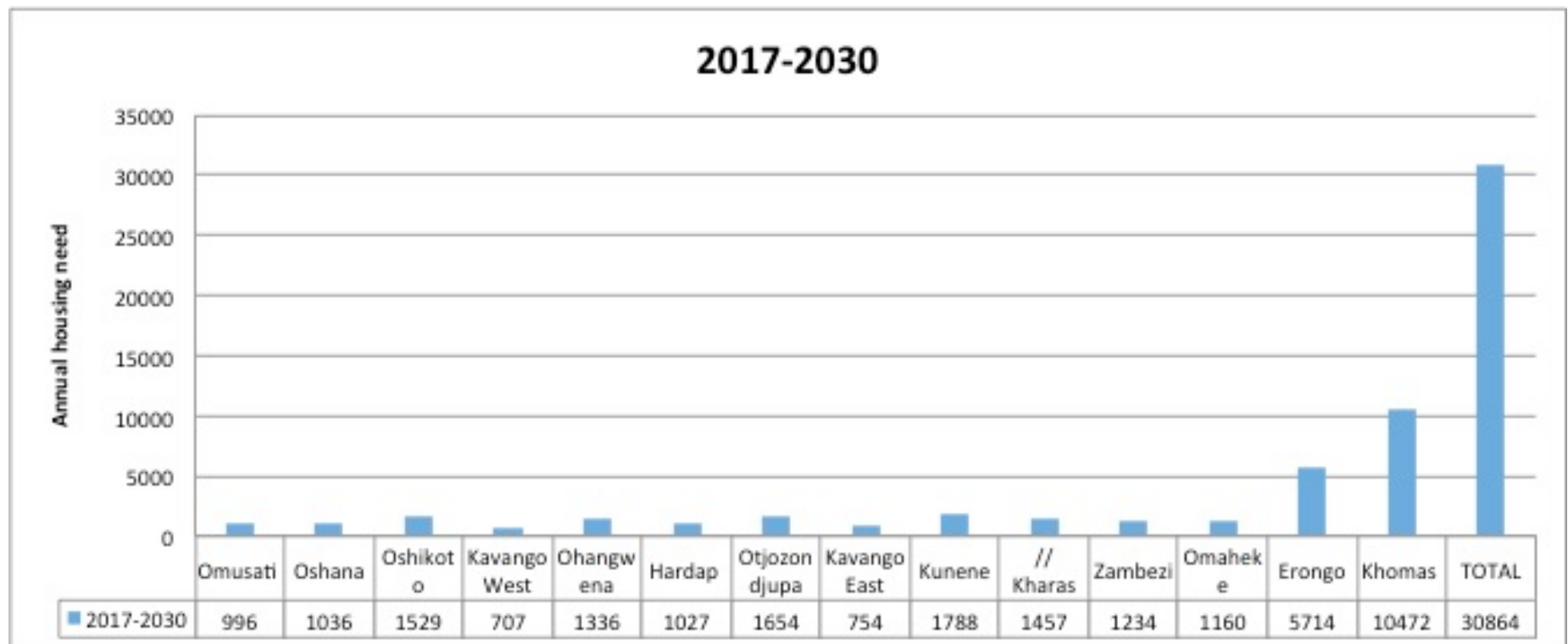




Housing Need per Region: 2020, 2030, 2040



Annual Housing Need per Region: 2017-2030





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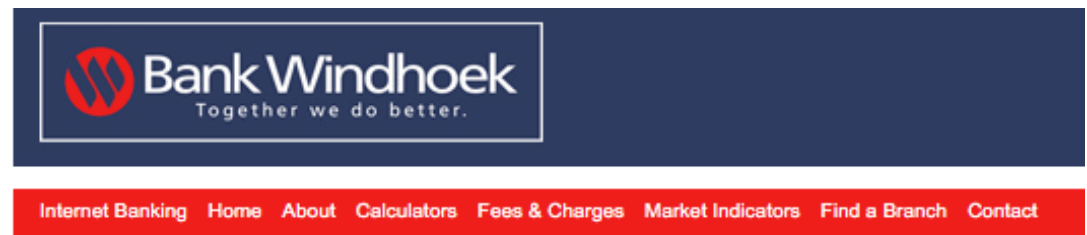
Median house prices

Last quarter of 2015 (FNB, 2015):

N\$800,000 (national)

N\$1,200,000 (Windhoek)

Source: [Bank Windhoek, 2016]



Monthly Home Loan

Updated financial calculators
Financial know-how at your fingertips

Required loan amount	N\$	<input type="text" value="1200000"/>	* Enter Mortgage Amount
Deposit	N\$	<input type="text" value="0"/>	Deposit Amount (Optional)
Loan Amount	N\$	<input type="text"/>	* Loan Amount
Repayment period		<input type="text" value="20"/> Year/s	* Enter Mortgage Period
Interest rate		<input type="text" value="11"/> %	* % per year
Mortgage Start Date		<input type="text" value="December"/>	<input type="text" value="2010"/> (Optional)
Amortization Table		<input type="checkbox"/>	Create Amortization Table
		<input type="button" value="Calculate"/>	<input type="button" value="Reset"/>
Monthly repayments	N\$	<input type="text" value="12386.26"/>	* Monthly Mortgage Payment
Minimum monthly income	N\$	<input type="text" value="41287.54"/>	* Minimum Monthly Salary
No. of payments		<input type="text" value="240"/>	* Months to pay
Total interest paid	N\$	<input type="text" value="1772702.57"/>	* Interest paid over lifetime of loan
Total repayments made	N\$	<input type="text" value="2972702.57"/>	* Repayments over lifetime of loan
		* Compulsory Fields	* Calculated Results



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2. TARGET GROUP: TEACHERS (PUBLIC SECTOR WORKERS)

- A total of 75 respondents from six primary schools in Windhoek in a period of three months.



Survey: TENURE

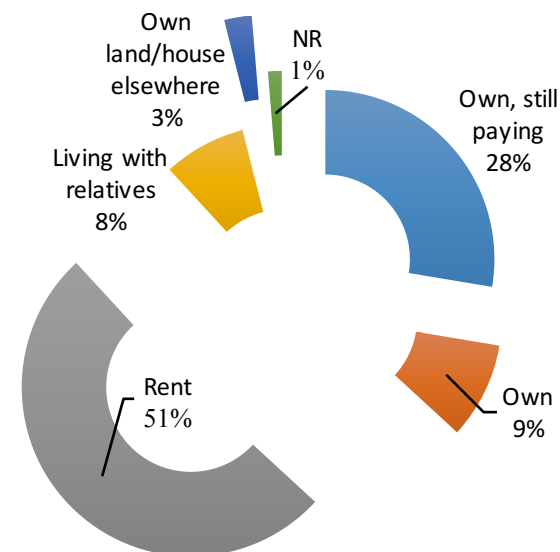
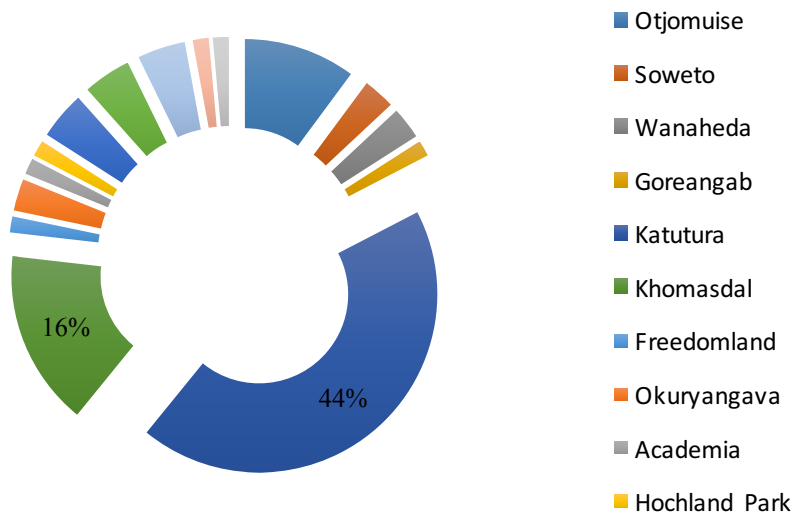


Table 7.2 Percent distribution of households by type of tenure status and area

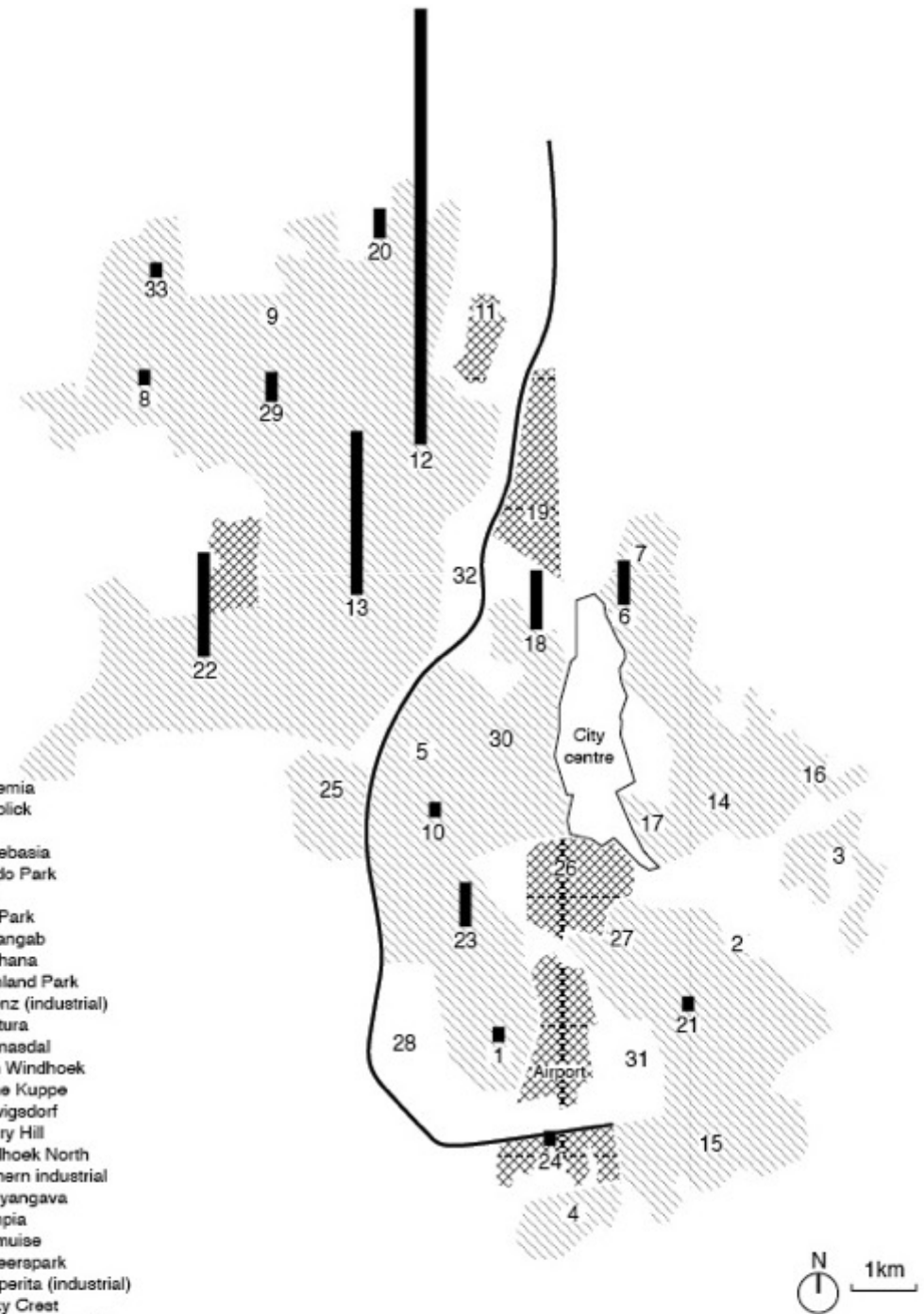
Area	Households	Owner occupied with mortgage	Owner occupied without mortgage	Rented (Government)	Rented (Local authority)	Rented (Parastatal)	Rented (Private firm)	Rented (individual)	Occupied rent free	Other
Namibia	464 839	14.2	56.1	1.4	2.4	0.5	2.8	9.1	12.6	0.9
Urban	228 955	23.0	37.4	2.8	3.4	1.1	4.6	17.3	10.0	0.4
Rural	235 884	5.7	74.3	0.0	1.4	0.0	1.0	1.1	15.1	1.3
Khomas	89 438	26.3	33.2	2.2	2.1	0.5	4.3	17.5	13.4	0.5



Survey: GEOGRAPHICAL LOCATION (HOUSING)

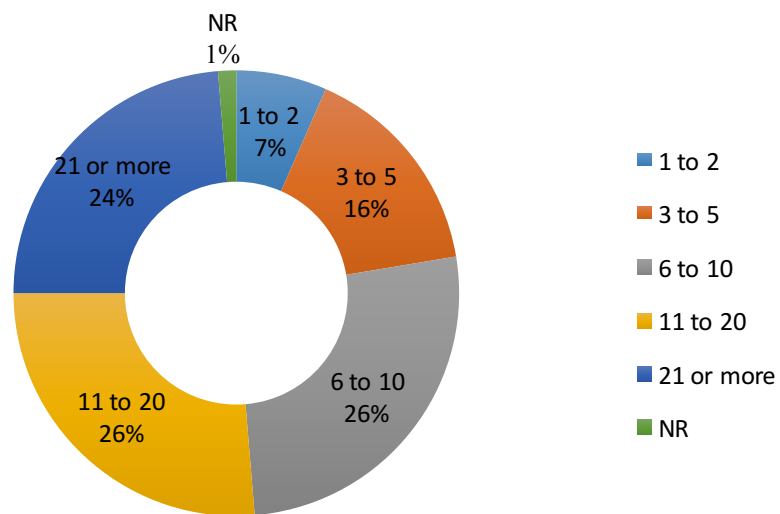


- Academia
- Ausblick
- Avis
- Cimbebasia
- Dorado Park
- Eros
- Eros Park
- Goreangab
- Hakahana
- Hochland Park
- Lafrenz (industrial)
- Katutura
- Khomasdal
- Klein Windhoek
- Kleine Kuppe
- Ludwigsdorf
- Luxury Hill
- Windhoek North
- Northern industrial
- Okuryangava
- Olympia
- Otjomuise
- Pioneerspark
- Prosperita (industrial)
- Rocky Crest
- Southern industrial
- Suiderhof
- UNAM (University)
- Wanaheda
- Windhoek West
- SKW Playgrounds
- Katutura Hospital
- Big bend (Havana)





Survey: YEARS EMPLOYED

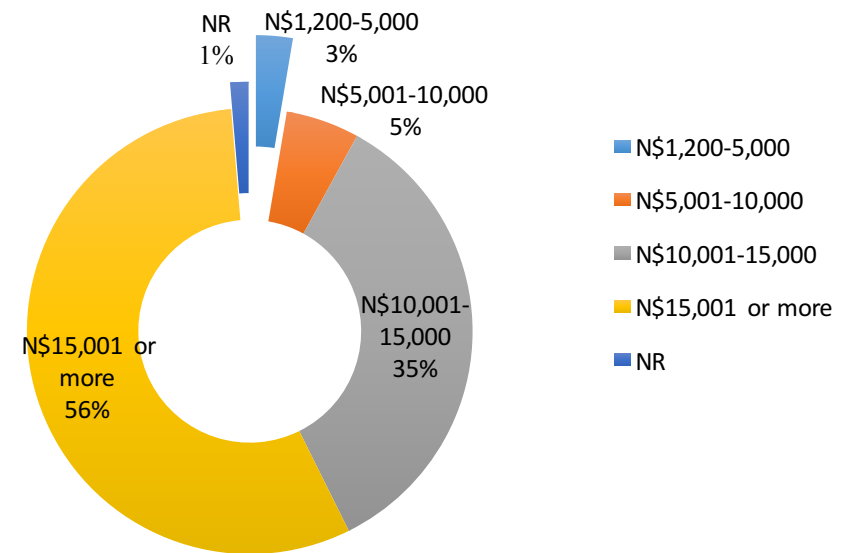




Survey: SALARY

National average wage is N\$6,626/month before deductions (NSA, 2015:63)

Teachers' national average wage is N\$10,227; N\$14,057 for males, and N\$11,405 for females (NSA, 2015:63)





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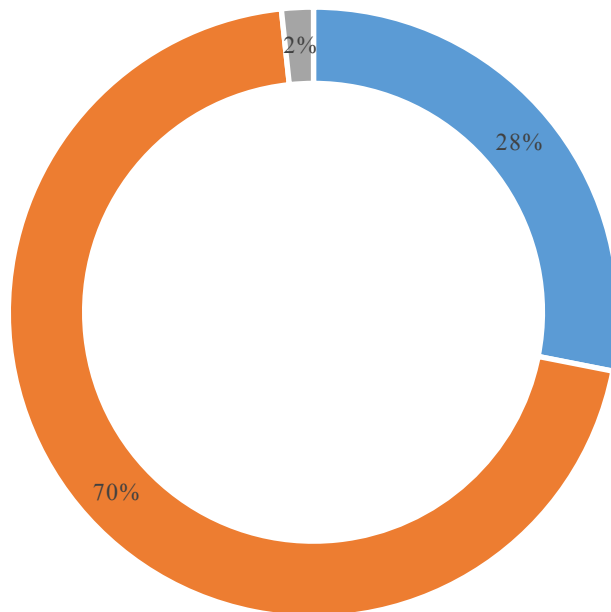
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2. TARGET GROUP: DOMESTIC WORKERS

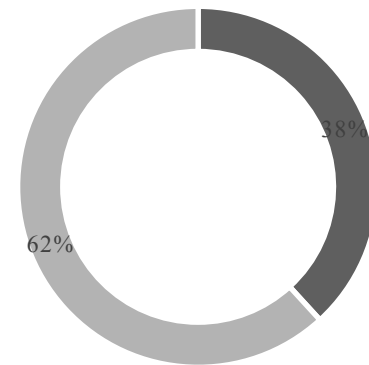
- Results represent information from 100 survey forms, out of 179 available
- All are based in Windhoek, and virtually all in the Western areas



Land and housing



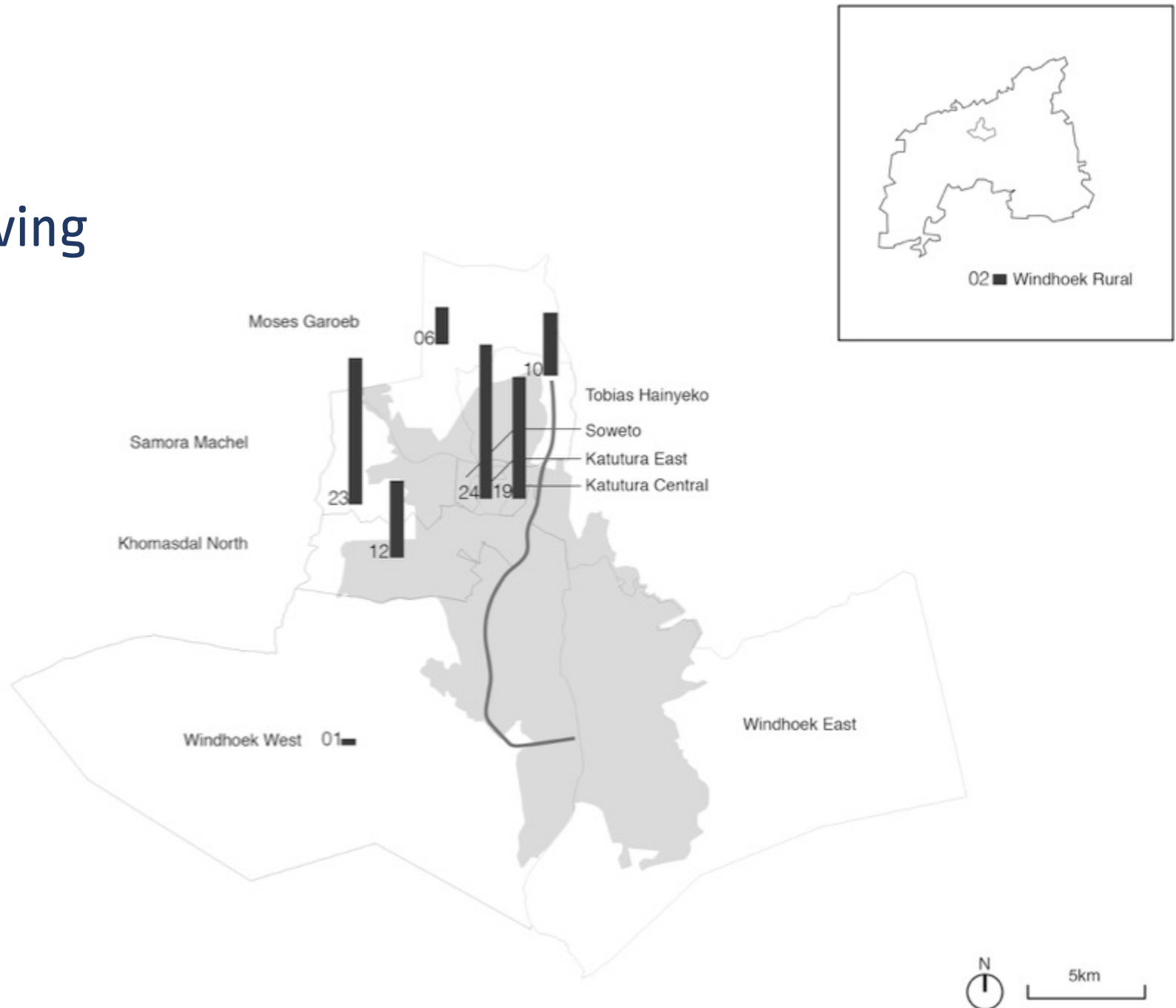
■ Own ■ Rent ■ Employer's home



■ Brick house ■ Corrugated metal structure



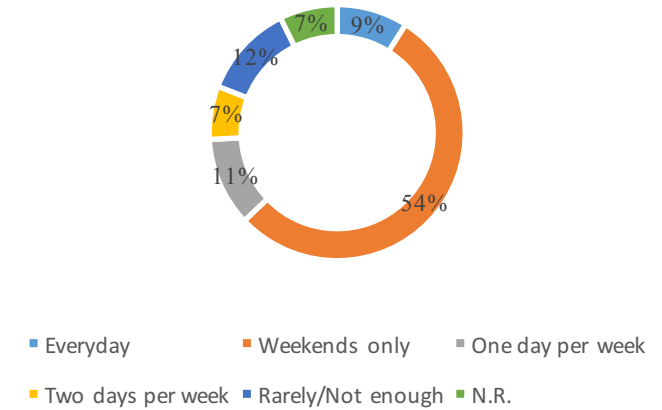
Place of living



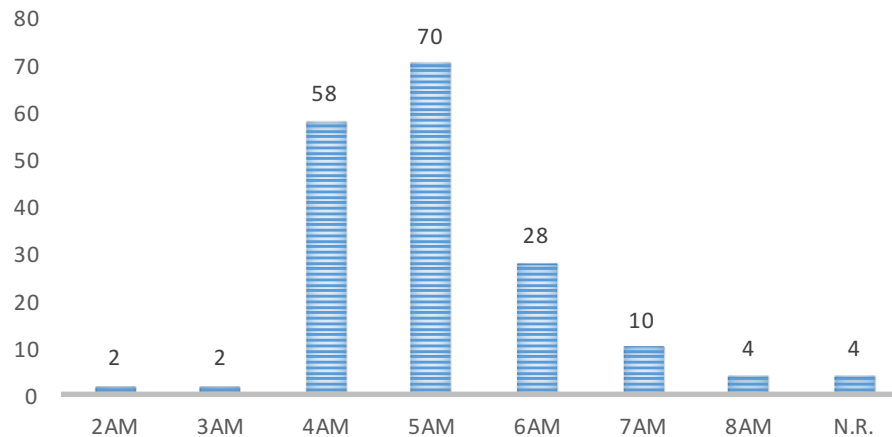


Everyday life

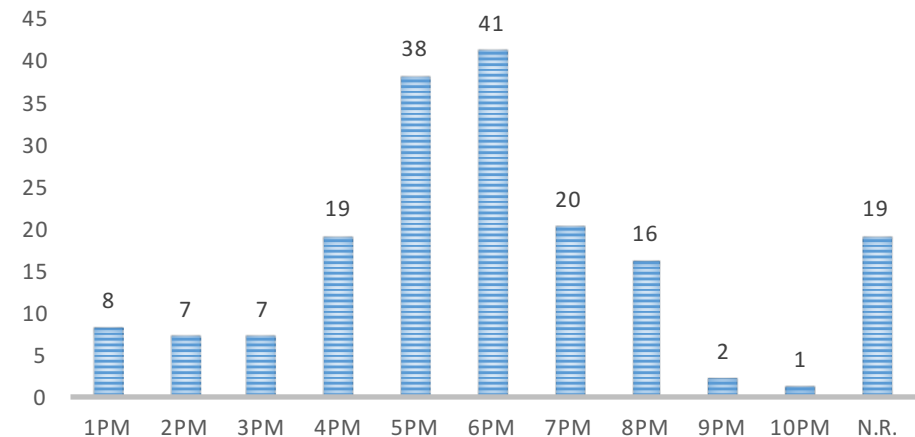
Time for personal matters



WAKE UP TIME



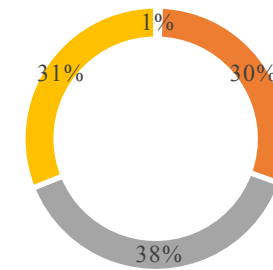
RETURN TIME FROM WORK



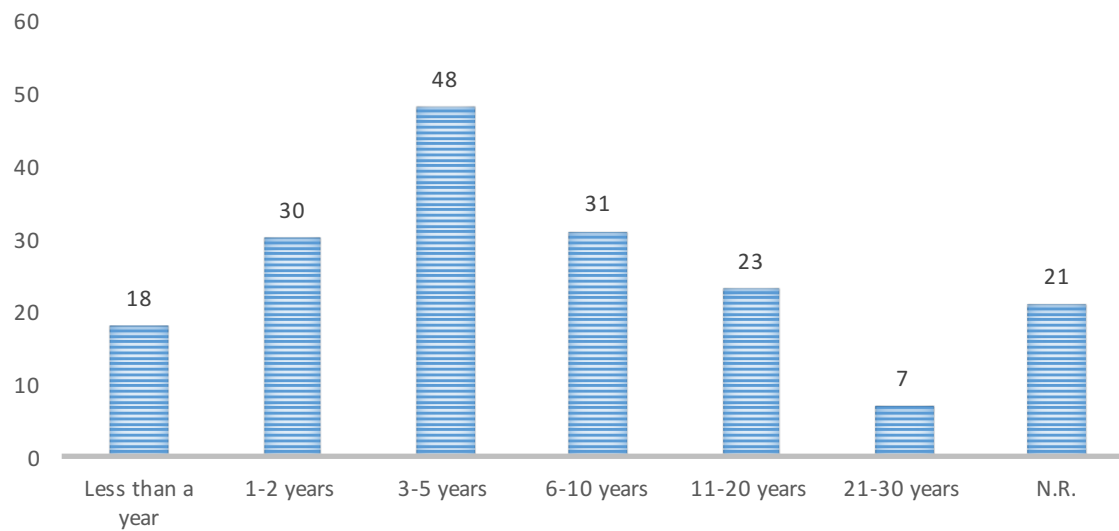


Employment security

CONTRACT

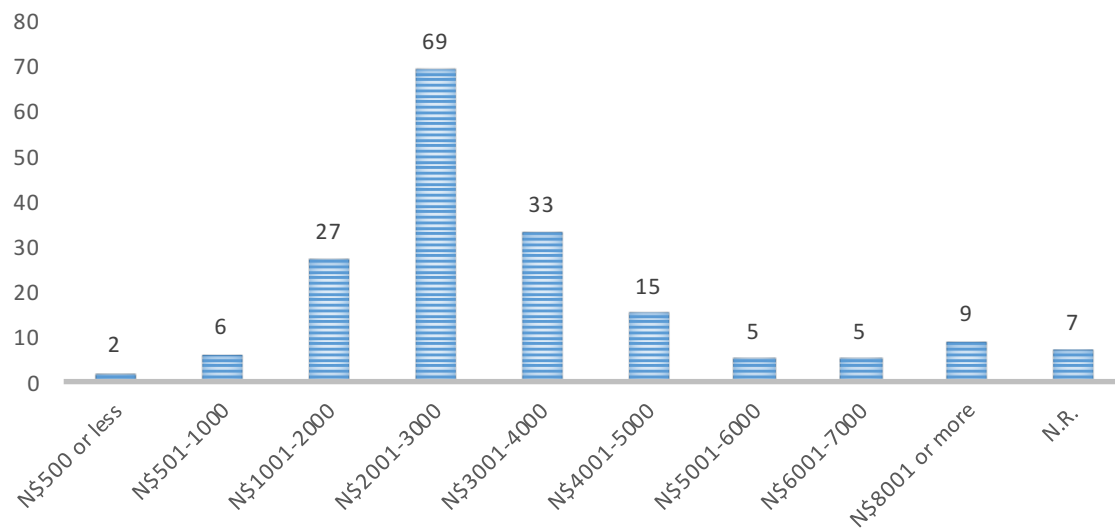


■ No contract ■ Written contract ■ Verbal contract ■ N.R.

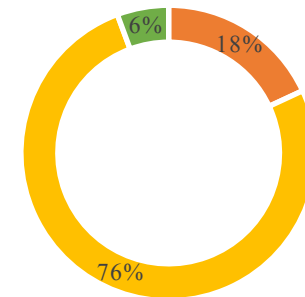




Salary

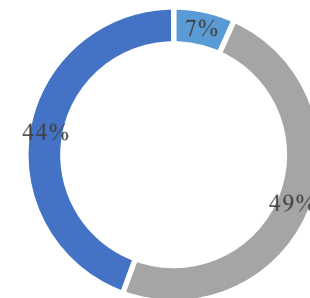


Payment mode



■ Cash ■ Bank transfer ■ N.R.

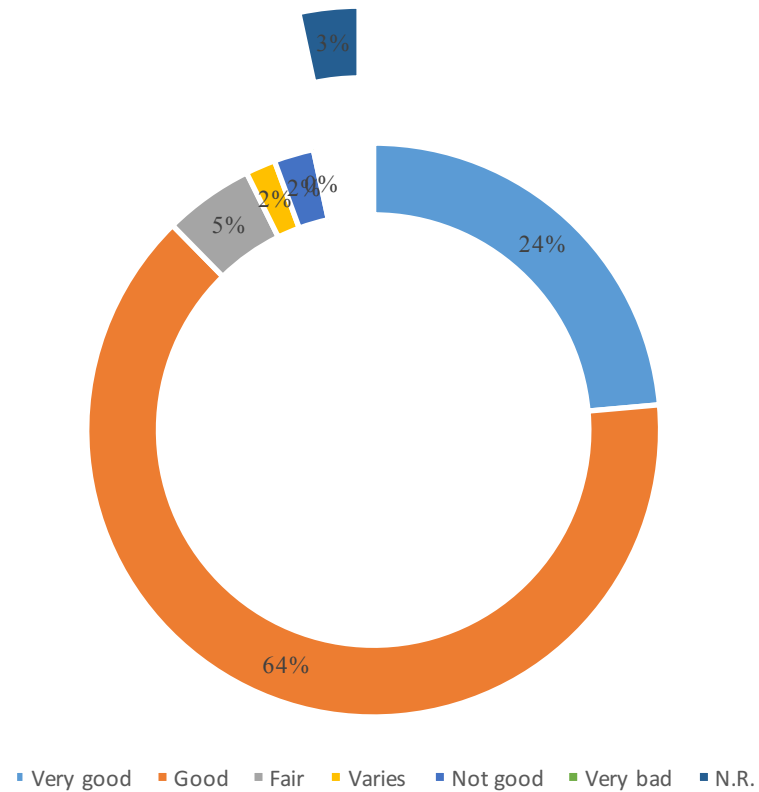
Payment rhythm



■ Daily ■ Monthly ■ N.R.



Employer-employee relations





Skills acquired through employment



- | | | | | | |
|---------------|----------------------------------|---------------|-------------------------|---------------------|-------------------|
| ■ None | ■ Improvement of existing skills | ■ Handyman | ■ Use of equipment | ■ Mechanical | ■ Joinery |
| ■ Welding | ■ Building | ■ Printing | ■ Manufacturing | ■ Gardening | ■ Computer |
| ■ Beauty | ■ Leadership | ■ Electrical | ■ Needlework | ■ Cooking or baking | ■ Arts and crafts |
| ■ Bookkeeping | ■ Plumbing | ■ Care-giving | ■ First aid / Medical | ■ Hospitality | ■ Education |
| ■ Management | ■ Design | ■ Accounting | ■ Sales / Customer care | ■ Debt collecting | ■ Business |
| ■ Shopsteward | ■ Military | ■ Secretarial | ■ Office admin | ■ Agriculture | ■ Laundry |
| ■ N.R. | | | | | |



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3. Windhoek's Open Space Network and Opportunities for Residential Densification

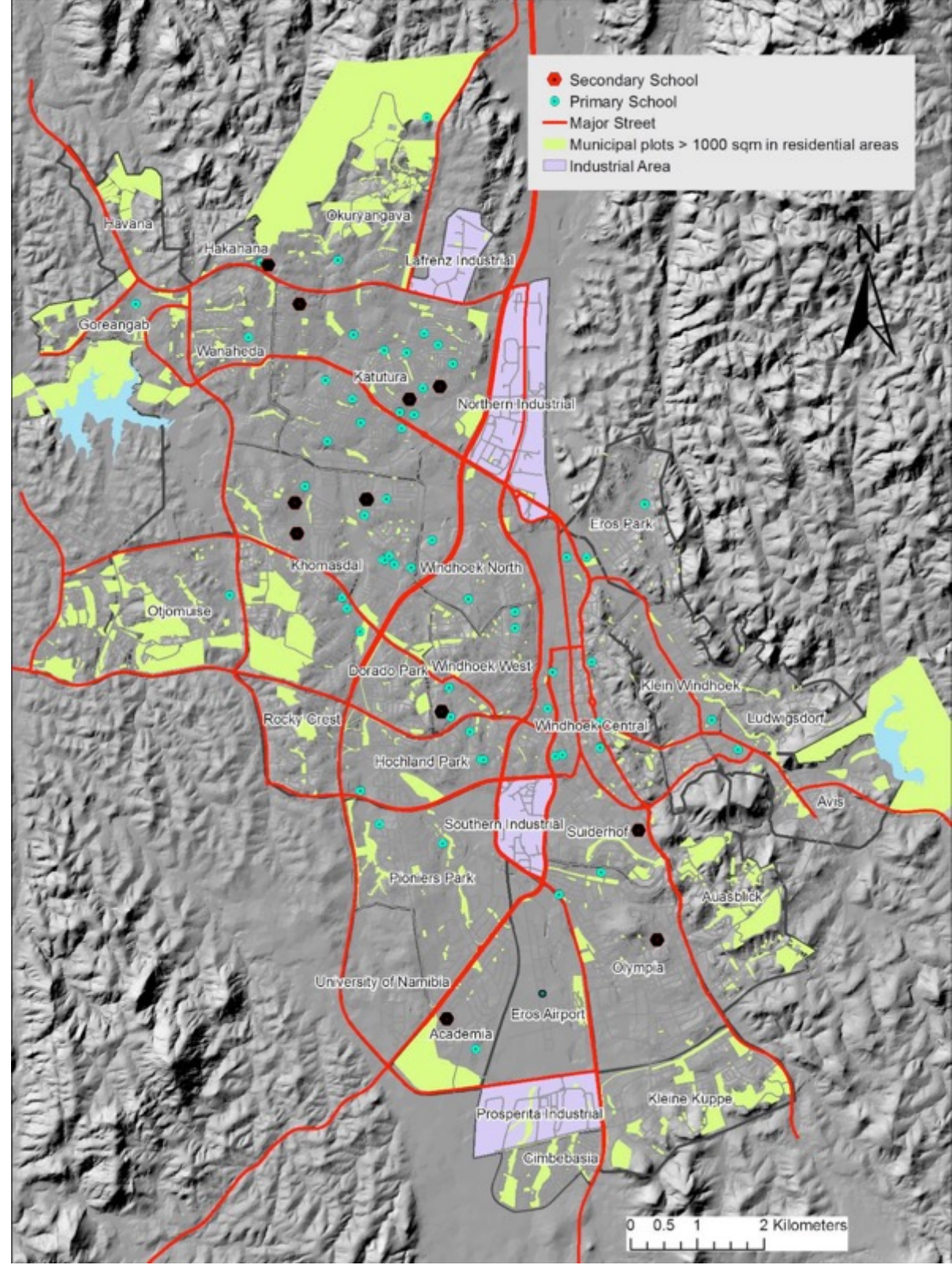


Municipal & Public Open Space

- Windhoek's has 365 hectares of land zoned as *Municipal* and 1062 hectares as *Public Open Space (POS)*.
- Windhoek's public open spaces generally have high ecological value;
- They are generally not well utilized by communities due to inaccessibility, a lack of infrastructure and resultant safety concerns;
- Generally, these plots of land are located within the built-up area and already have access to bulk infrastructure thus not requiring full servicing;
- Bulk infrastructure might need to be upgraded to cater for increased densities in certain cases.



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Municipal & Public Open Space

- If a nominal percentage (30%) of Municipal and POS would be made available for infill housing development (assuming ecological preservation and simultaneous landscape improvement to increase community usage of the remaining areas), at least **428 hectares would become available for housing development.**
- Assuming a net density of 50, 80 or 120 units per hectare (medium, high density) this land could allow for **21,400, 42,800 or 52,360 dwelling units** respectively with infill development (2-4 story walk-ups).
- Such high densities would be compensated by the adjacent **fully developed public open spaces** for the residents' benefit.



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Independence Avenue
P O Box 59
Windhoek, Namibia
fax: +264 61 290 2111
tel: +264 61 290 2374
www.windhoekcc.org.na

Property Information

ROBERT MUGABE AVE
GPS Location: Lat,Lng(-22.608 17.1060)
Parcel Number: 253
Zoning: UNDETERMINED
Size(square meters): undefined



Beacons (WGS84):

17.106495913995207 -22.608614176584
17.1054835527269 -22.608027823226013
17.10504838137295 -22.607923619973388
17.104886210265903 -22.608023431076198
17.10633955940658 -22.610070197945534
17.107199824115495 -22.609434638883396

Data

ERF_SIZE	22140.8939999983	OWNER	CITY OF WINDHOEK
PARCELKEY	000000001000000000[...]	TENANT	N/A
ZONING	UNDETERMINED	DENSITY	N/A
ERFNUMBER	253	BULK	0
STREETNAME	ROBERT MUGABE AVE	TOWNSHIP	AUASBLUCK
HOUSENUMBER	00		



Rev. Michael Scott Street
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Property Information

FLORENCE NIGHTINGALE STR
GPS Location: Lat,Lng(-22.543 17.0521)
Parcel Number: 3088
Zoning: PUBLIC OPEN SPACE
Size(square meters): undefined



Beacons (WGS84):

17.051777646055605 -22.542739919831337
17.051688437731453 -22.542882462303883
17.051591961181543 -22.543036657421865
17.051499118447186 -22.543185026133227
17.051413495016572 -22.543321850491225
17.051377579896872 -22.543399251038576
17.052966674550408 -22.544011580301316
17.052849959462684 -22.543318858182314

Data

ERF_SIZE	11247.684	OWNER	CITY OF WINDHOEK
PARCELKEY	000000020000000030[...]	TENANT	N/A
ZONING	PUBLIC OPEN SPACE	DENSITY	N/A
ERFNUMBER	3088	BULK	0
STREETNAME	FLORENCE NIGHTINGALE STR	TOWNSHIP	KHOMASDAL
HOUSENUMBER	N/A		



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Rev. Michael Scott Street
Independence Avenue
P O Box 59
Windhoek, Namibia
www.windhoekcc.org.na

Property Information

NELSON MANDELA AVE
GPS Location: Lat/Lng(-22.559 17.0976)
Parcel Number: 1077
Zoning: RESIDENTIAL
Size(square meters): undefined



Beacons (WGS84):

17.097052741306253 -22.559043376817353
17.097190041585435 -22.559170994926532
17.097224137102035 -22.55925984153574
17.0972895030432 -22.559429950212063
17.09735495655841 -22.559600058804264
17.096942779062953 -22.55973659126422
17.096956027540106 -22.55977103738449
17.09759710478543 -22.559558376144896
17.097985101877865 -22.559986462779374
17.098451931465704 -22.559897931082393
17.097722547602597 -22.558788657165433

Data

ERF_SIZE	8801.812	OWNER	CITY OF WINDHOEK
PARCELKEY	000000022000000010[...]	TENANT	N/A
ZONING	RESIDENTIAL	DENSITY	1 DWELLING / 900M²
ERFNUMBER	1077	BULK	0
STREETNAME	NELSON MANDELA AVE	TOWNSHIP	KLEIN WINDHOEK/KLE[...]
HOUSENUMBER	00		



Rev. Michael Scott Street
Independence Avenue
P O Box 59
Windhoek, Namibia
www.windhoekcc.org.na

Property Information

ZIEGLER STR
GPS Location: Lat/Lng(-22.559 17.0986)
Parcel Number: 489
Zoning: RESIDENTIAL
Size(square meters): undefined



Beacons (WGS84):

17.0983977185067 -22.558560645819465
17.098197859258857 -22.558655353154272
17.09892779836722 -22.559639993496273
17.098972548963907 -22.559616105204775
17.099109308422214 -22.559543129167857
17.098840608267032 -22.55910137933701

Data

ERF_SIZE	3208.569	OWNER	CITY OF WINDHOEK
PARCELKEY	000000022000000004[...]	TENANT	N/A
ZONING	RESIDENTIAL	DENSITY	N/A
ERFNUMBER	489	BULK	0
STREETNAME	ZIEGLER STR	TOWNSHIP	KLEIN WINDHOEK/KLE[...]
HOUSENUMBER	31-33		



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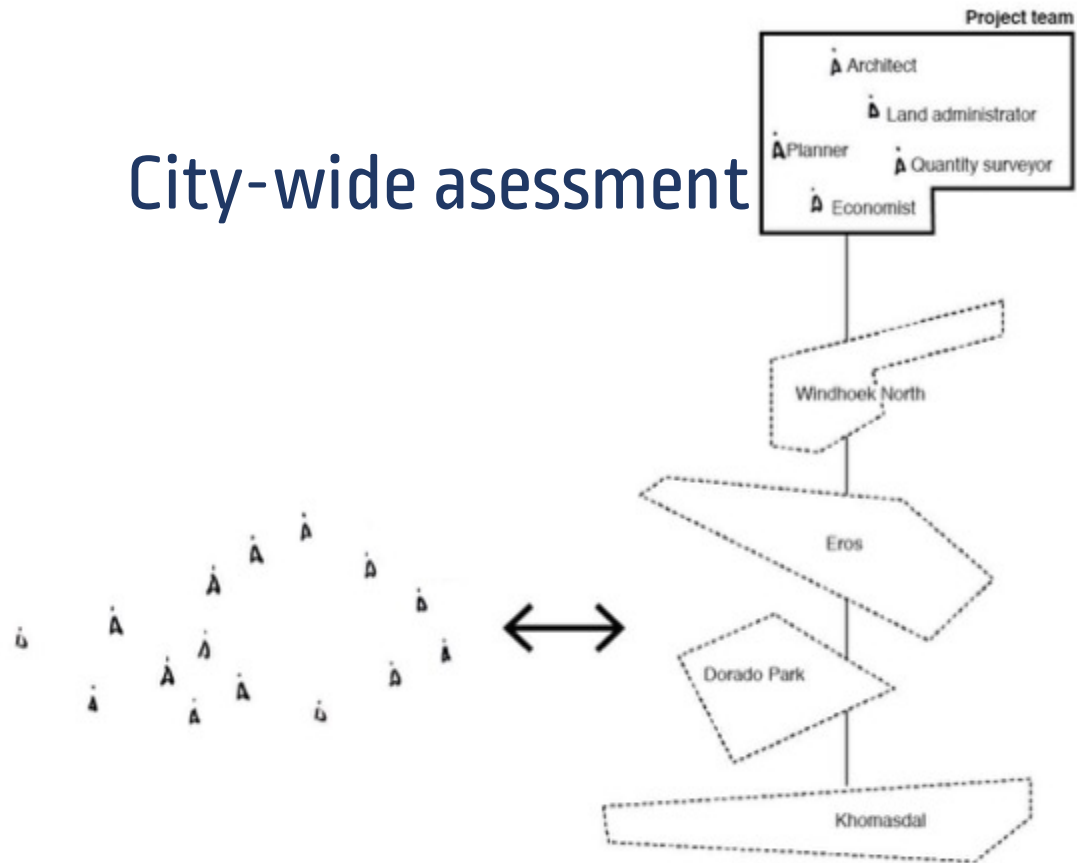
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4. Urban Infill Affordable Housing

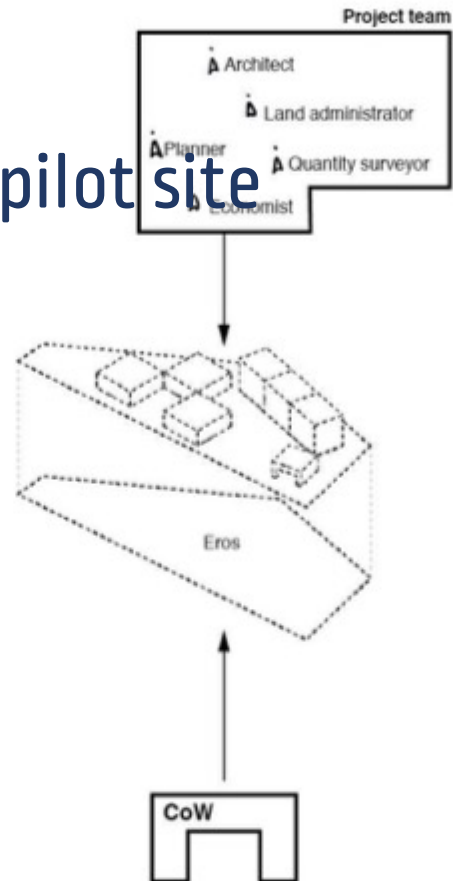


City-wide assessment



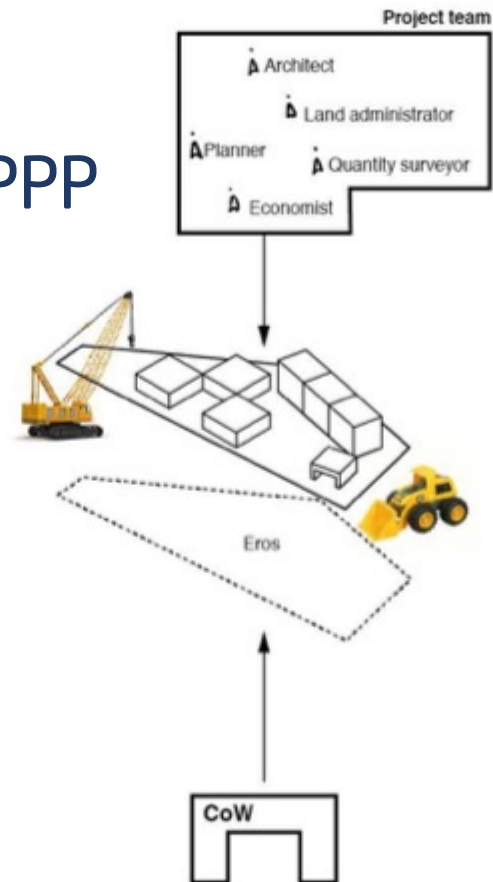


Identification of pilot site



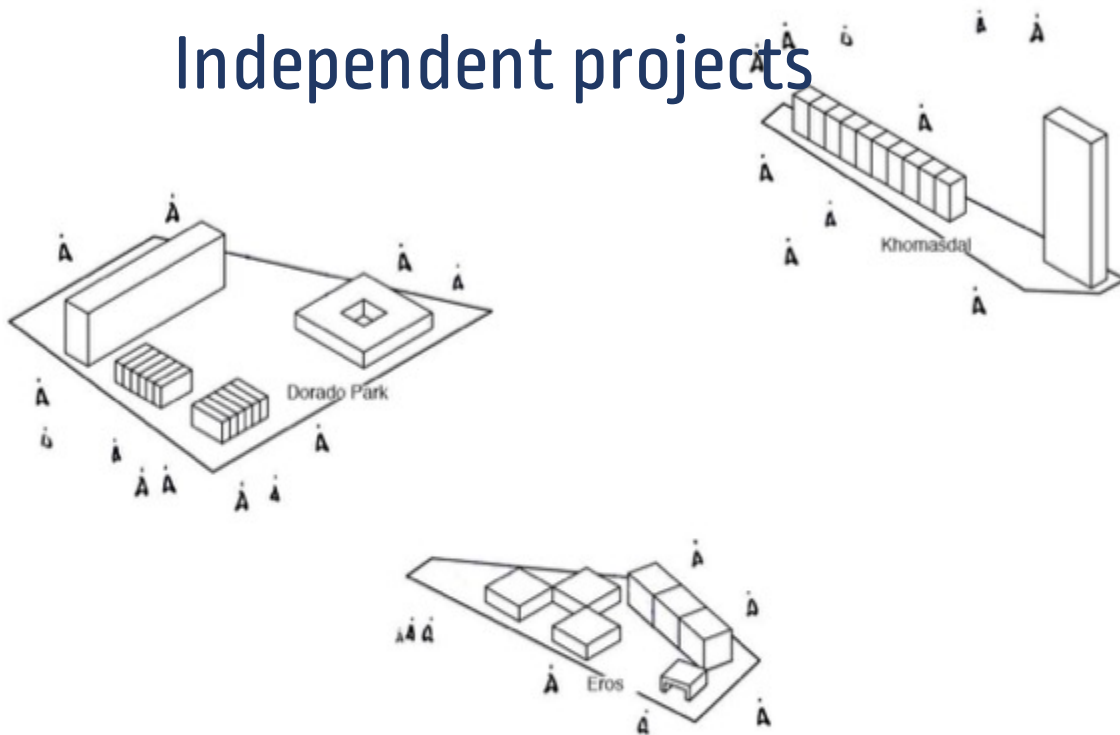


Construction / PPP



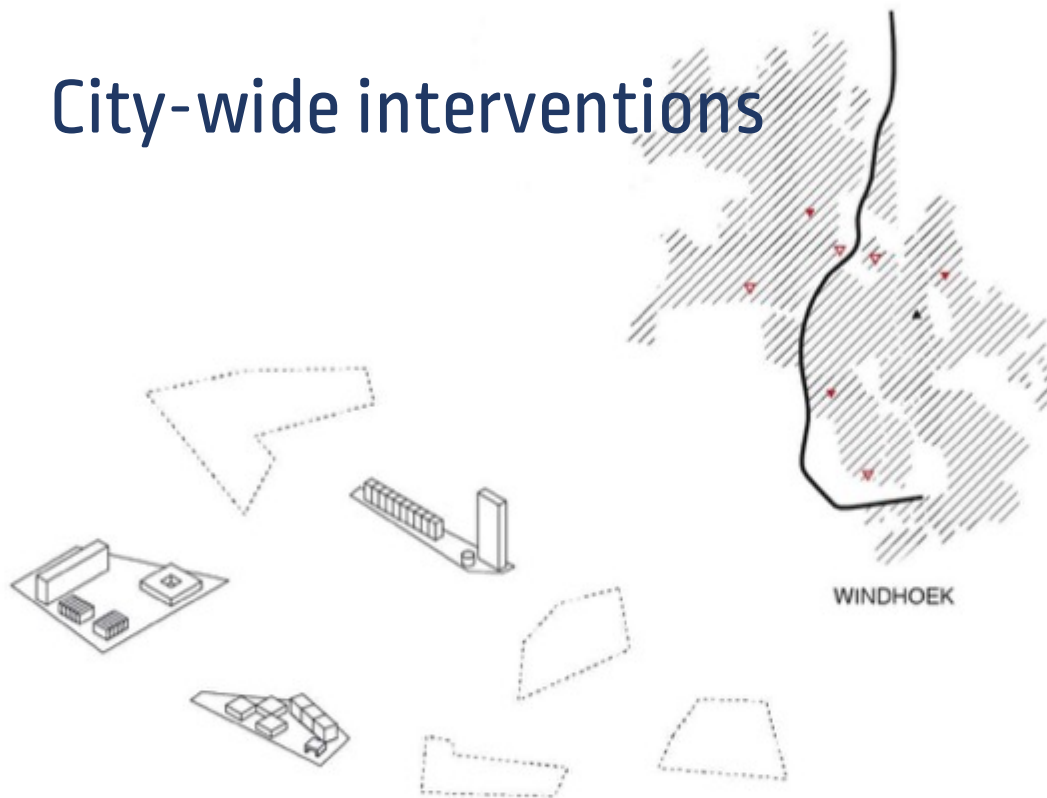


Independent projects





City-wide interventions





2-4 storey walk-ups, collective spaces





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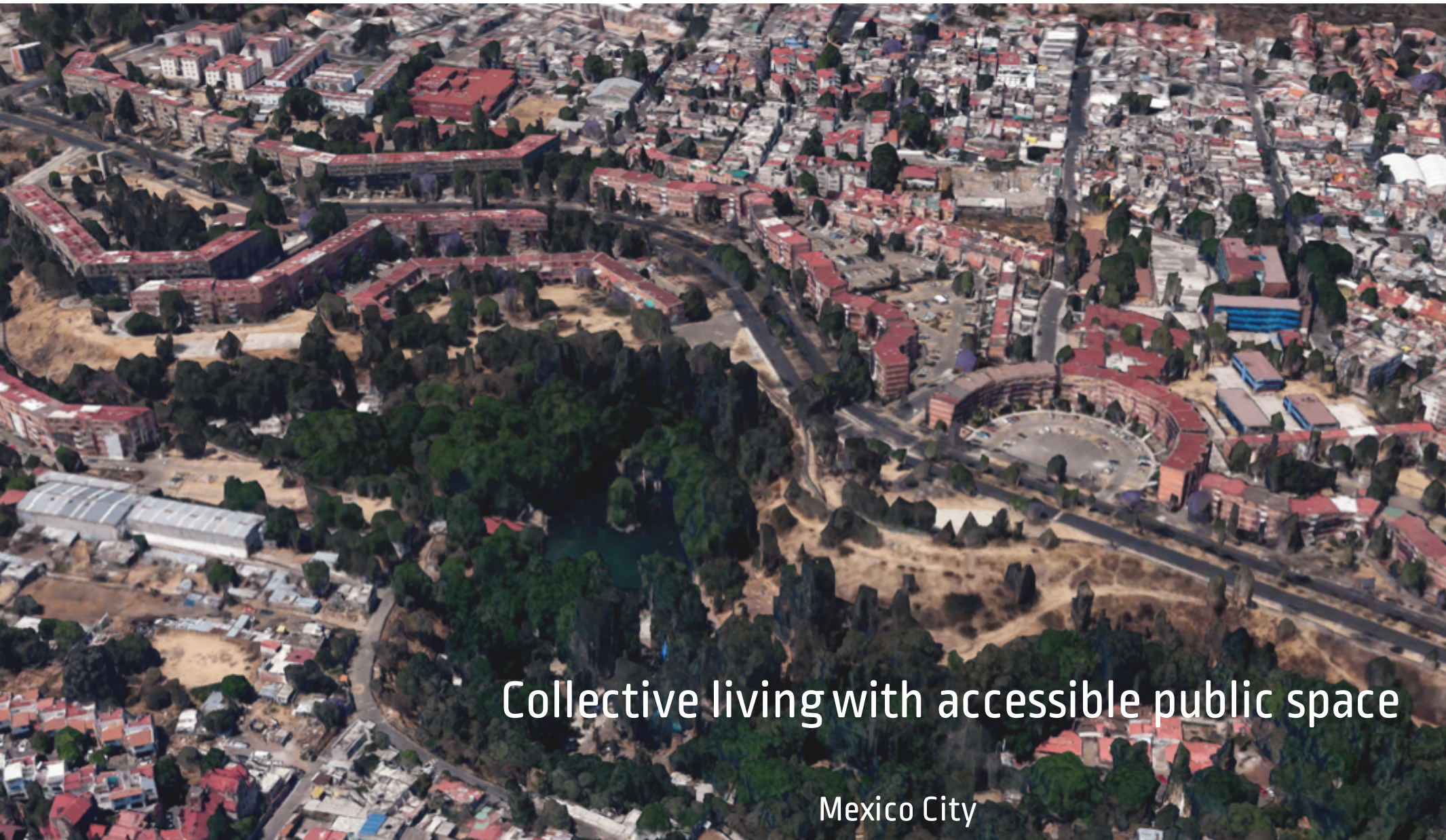
Incremental building



Quinta Morrei, Elemental Chile



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Collective living with accessible public space

Mexico City



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5. Proposed NUST / CoW partnership for Innovative Housing Solutions



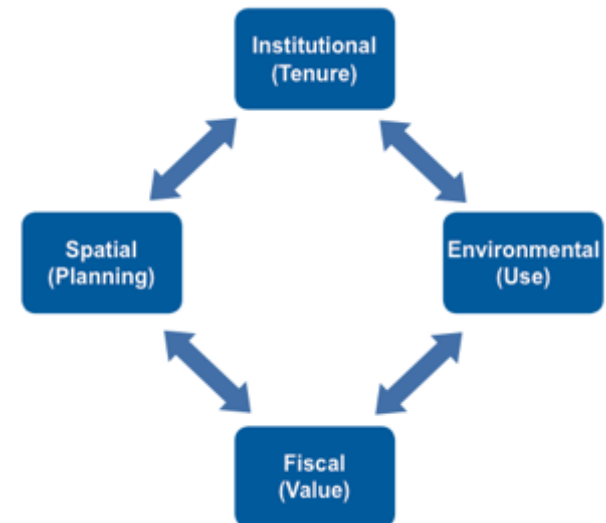
Recent CoW Expression of Interest: Housing

- Demonstrate technical capability, competence and relevant experience;
- Company profile and key Staff CVs;
- Details of housing solutions offered (various options may be proposed);
- Provisional cost per unit (m2) of housing solution offered;
- Information on funding solution for the said project;
- Indication of maximum funding available for project;
- Inclusivity and regard for Previously Disadvantaged Groups;
- Corporate Social Responsibility undertaking.



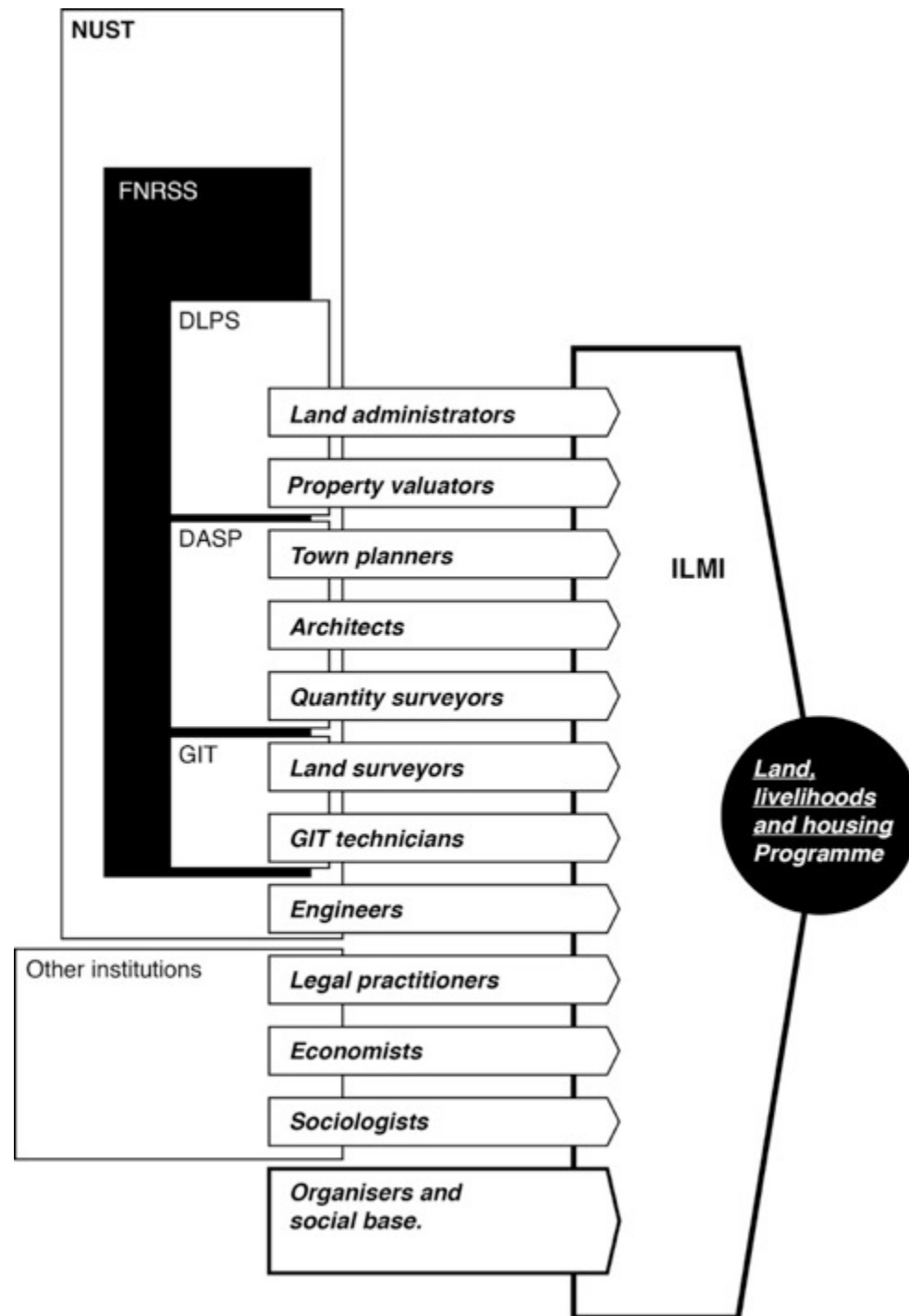
ILMI Land, Livelihoods and Housing Research Programme

- Institutional & Legal Frameworks for Tenure Security
- Tenure Security for Sustainable Livelihoods
- Governance and Land Administration
- Spatial Planning and Development Processes
- Transport and Infrastructure Development and Management
- Role and Function of Participatory Processes
- Space, Architecture and Culture
- Human - Ecosystems Interaction
- Development and Environmental Sustainability
- Impact of Climate Change on Land, Livelihoods and Housing
- Land and Housing Delivery Systems
- Affordability of Land and Housing in Namibia
- Taxation, Service Delivery and Equity
- Formal and Informal Property Markets





ILMI Fundamentals





Proposed Way Forward toward Affordable Urban Housing

- Establish a **Memorandum of Understanding** between the NUST Integrated Land Management Institute (ILMI) and the City of Windhoek to outline the proposed collaboration **to explore innovative affordable housing options**.
- Conduct a **city-wide assessment of vacant municipal land**, with an emphasis on **Undetermined** and **Public Open Space** zoning areas and development limitations.
- Assess the **potential for developing ecologically sensitive yet functional public spaces paired with affordable infill housing** developments.
- Co-develop a **Municipal Affordable Housing Densification Programme** with CoW in line with its housing delivery mandate.
- Co-develop **Housing Pilot Projects** aimed at the two representative target groups: **Domestic Workers** and **Public Sector Workers**.



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6. Urban Transformation: Student Works

Inspired by the Riverwalk concept, Year 4 students of architecture developed conceptual urban design interventions between Goreangab and Avis Dam to transform the network of dry Riverbeds into an interconnected urban fabric by introducing housing and mixed-use infill projects, improved public spaces and transport links as well as other public amenities. The projects demonstrate opportunities for urban re-densification based on an urban design framework that would reconnect parts of the city that are currently separated, increase the residential density to allow viable public spaces to be created and increase the number of affordable housing opportunities within inner city areas.



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ABOUT ILMI

The Integrated Land Management Institute is a centre of the Faculty of Natural Resources and Spatial Sciences (FNRSS) at the Namibia University of Science and Technology (NUST) committed to develop reputable and multidisciplinary research and public outreach activities in the field of land administration, property, architecture and spatial planning.

ilmi.nust.na