

# MOTIVATORS, BARRIERS AND OPPORTUNITIES FOR WATER AND SANITATION ENTERPRISES IN TIMOR-LESTE





This summary presents key findings of research into the motivators, traits and challenges met by small-scale enterprises in Timor-Leste as well as opportunities and constraints to expanding their role.



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Water system in need of maintenance

mall-scale enterprises play an emerging and important role in supporting increased access to water and sanitation products and services in Timor-Leste and elsewhere. While studies have been undertaken to examine the results of enterprise roles, little is known about what motivates enterprises' involvement in service provision for the poor, and what enterprises see as the key factors that support and hinder their viability and business success. In addition, there is opportunity to explore expanded roles for existing enterprises to address limitations in current supply-chain and service provision models in Timor-Leste.

In Timor-Leste, the emergence of water and sanitation enterprises has included several types of organisations and roles including water contractors, supply chain actors such as kiosks and retailers, hybrid enterprises (private sector and civil society organisations combined) and associations of community

based organisations. Of these, this study concerns three types of enterprises:

- Water contractors: These construction companies play an important role in the development of the country's rural water services. In recent years, government contracts for water system construction have been tendered to such registered companies, as have systems built under the Australian aid-funded Rural Water Supply and Sanitation program 'Bee, Saneamentu no Ijiene iha Komunidade (BESIK)'
- District retailers of construction materials:
  These materials supply shops located in district centres play a major role in the supply chain of sanitation products as these provide the majority of toilet building materials available in the market, including imported toilet pans, cement and other related construction materials.
- Local NGOs: Locally made sanitation products are provided by local NGO led small enterprises supported by international development agencies. These represent only a small percentage of the sanitation products in the country, but are currently envisaged to play roles in helping develop locally-appropriate solutions for rural community sanitation needs.

This research engaged with these three types of organisations and to assess their motivations, entrepreneurial and pro-social traits, and capacity to play expanded roles in supporting water and sanitation service delivery.

This study was undertaken by Institute for Sustainable Futures, University of Technology Sydney in collaboration with the National University of Timor Lorosa'e (UNTL) and WaterAid Timor-Leste.

# **METHODS**

This study drew on literature in the fields of entrepreneurship and social entrepreneurship, as well as previous research on the political economy of enterprise engagement in water and sanitation services in Timor-Leste, and other studies outlining gaps in service provision.

The study involved semi-structured interviews with 14 national and district based water contractors, 12 retailers of construction materials (including imported sanitation related products) in district capitals, and five local NGOs who were producing or retailing local sanitation products. Interviews were conducted in Dili, Liquiçá, Baucau, Manatuto and Maliana.

# PROFILE OF RESPONDENTS AND THEIR ENTERPRISES

The owners of water contractor businesses interviewed (n= 14) were dominantly male (11 of 14 owners) with the most common age bracket being 35-45 years (and other owners older or younger than this). Almost half were university educated (6 owners) across economics, management, electrical engineering, poly-technique and industrial engineering, a few graduated from technical schools (2 owners) and remainder had completed high school (6 owners). They had diverse previous work experience including private sector, self-employed, NGO, bank, agriculture and public sector. Only one owner had no previous work experience. The majority of owners spent 40-70 hours per week, however some owners only worked full-time when they had active projects (3 owners).

The companies interviewed were mostly construction companies (11 of the 14) with varying degrees of specialised expertise in relation to water systems. The three exceptions were a company specialised in well drilling, and two companies that retail water system parts and pumps, and offer installation services for water storage tanks and/or electric pumps. Amongst companies interviewed, eight were district-based companies, and six were national. Districtbased companies tended to be started more recently (5 companies were under 5 years old) and national-based companies were mostly 12 to 18 years old. In general all the companies were relatively small, with no company employing more than 10 people, and most staff only working on a 'project' basis. The selection of staff was generally on the basis



Company who retailed water system parts

of familiarity and connections, either within families or within close social networks and more formal recruitment processes appeared to be little used.

The age of the companies varied, depending on whether they were district-based or national. District-based companies tended to be younger, with five companies under five years old, and the others under 12 years old. National-based companies varied between 12 to 18 years old, with one outlier that was only six years old.

The starting investment for district-based companies was USD 2,500 to 20,000 and for



District based construction materials retailer



The reason we choose relatives is because the projects are not every year. Sometimes 20 companies compete and we may not win. So our staffs are permanent staff, but they do not work all the time.

- Water contractor business owner

national companies mostly from USD 5,000 to USD 110,000, all dominantly sourced from personal savings. The overall growth rate of company revenue and profit appeared slow, and matches the small sizes noted above in terms of employees and the variable levels of success in winning tenders. Revenue was primarily from government contracts or aid-related

contracts, with a much smaller proportion of work for private companies or individuals. The large majority of companies (93%) had a very optimistic outlook on their future, with only one company expressing any uncertainty.

# PROFILE OF RESPONDENTS



Locally produced toilet pan by a local NGO

# **Retailers of construction materials**

interviewed (n = 12) were 67% male, equally distributed between the age bracket of 35-45 years old and 46-55 years old, and with relatively high levels of education. The majority had previous working experience, mainly as an employee for others or self-employed occupations or business, and developed the skills to run their retail businesses through self-learning. Most also sold toilet pans, although these were not the core focus of their business, which included a broad range of other products such as basic food and household items. The majority of

the retailers had ten or less staff, although a small percentage that operated a larger set of business activities associated to their retail business had a larger number of staff. These additional business activities included concrete and brick production, welding, maintenance services within the warranty period of some products, and construction contracting. All businesses were formally registered and had more than five years of operation. The amount of investment to start the business varied from less than USD 5,000 up to more than USD 75,000. Except for one case, larger amounts of start-up investment

were made in more recent years (2006 and above), whereas lower amounts of start-up investment were made in 2002 or before. The business monthly revenue in turn, ranged from USD 3,000 to USD 25,000, although in the majority of the cases reported this was lower than USD 10,000.

Leaders of local NGOs interviewed (n = 5) were all male and predominantly in the age bracket of 35-45 years old, and with relatively high levels of education. Most had previous working experience within the NGO sector and only one had business experience. All NGOs had been



Roles are not permanent with fixed salaries as these are dependent on the availability of contract projects.

- Local NGO

trained on how to produce toilet pans through their international NGO partners, although only three had proactively engaged in selling these products as a business activity. All NGOs had been operating for nine to 15 years. Three of the NGOs had a fixed number staff (five to six staff) with permanent salaries, whereas the other two assembled teams depending on the availability of contracting services to INGOs. Three NGOs had established businesses separate to the NGO aimed at selling sanitation products, however due to insufficient sales, two of these businesses had stopped operating. These NGOs had been fully supported by their INGO partners for the starting investment of this business activity. Support included technical training, the moulds for the toilet pan and the septic tank rings, promotional materials, and funding for the production materials. A monthly revenue of USD 40 - USD 60 was reported by the NGO who was still active as a sanitation business, although this represented a very small proportion of the NGO's income generation activities, and contrasted to a much larger monthly revenue of USD 400 - USD 500 from their concurrent bamboo furniture business.

# PROFILE OF ENTERPRISES

	WATER	SANITATION	
Characteristics	Water Contractors (n = 14)	Retailers of construction materials (n=12)	Local NGOs (n=5)
Size / number of staff	All were relatively small (under 10 staff) and most staff working on a project by project basis. Companies mostly had 2-6 staff with exception of 2 larger national companies (with 8 and 16 staff respectively)	9 had ten or less staff, 2 had between 10 and 20 staff and, and 1 had 70 staff	3 had a fixed number staff (5 to 6 people) with permanent salaries, 2 assembled teams (5 to 8 people) depending on the availability of contracting services to INGOs
Legal status	All formally registered as businesses	All formally registered as businesses	All formally registered as NGOs
Number of years of operation	5 of the district-based companies were under five years old, and the remaining 3 under 12 years old. National-based companies were 12 to 18 years old, with one that was only six years old	9 had been operating for more than 10 years, 2 between 5 and 10 years, and 1 for less than 5 years	All had been operating for more than 15 years
Products and services offered	11 were construction companies building roads, schools and other infrastructure, with varying degrees of specialised expertise in relation to water systems, 1 specialised in well drilling, and 2 companies retail water system parts and pumps, and offer installation services for water storage tanks and/or electric pumps	9 sold toilet pans, 3 undertook concrete production and welding, 1 offered maintenance services associated to the warranty of certain products	2 sold various toilet components and full installation services, 1 only sold toilet pans and did not offer toilet installation services

# KEY FINDINGS ABOUT WATER CONTRACTORS

Entrepreneurial traits: Company owners demonstrated traits of proactiveness, need for achievement and innovativeness but a much lower propensity for risk-taking. Owners were proactive in applying for tenders, and 71% felt that it was easy or very easy to make a profit in their business if they took initiative. Need for achievement was demonstrated in various ways, through owner's confidence and commitment at start-up and in the future concerning achieving business success. Risk taking was believed to be important in theory, but in practice many owners demonstrated fear of taking risks rather than an aptitude to do so.



... there is a lot of opportunity, it is up to us to seek.

- Water contractor business owner



A leader should... also try to get some trust from other institutions. When we get trust it is better. We must guarantee the quality.

- Water contractor business owner



...[to be successful you need] a passion for what you do- you need to want to do it. Also you need to be patient. You need to be adventurous, to like a challenge, it is very challenging.

- Water contractor business owner

Pro-social traits: Owners demonstrated diverse range of motivations and drivers and a prevalence of pro-social motivations. The most common driver was to contribute constructively to development of Timor-Leste. Other motivations included to offer employment (particularly in the districts), to build the professional capacity of their staff, to assist rural communities and to provide a quality service. A sense of social responsibility was strong, and only respondents mentioned profit or personal gain as part of their objectives. Prosocial motivations were evidenced in that companies were willing to undertake support services to communities for free when requested. One respondent focused on sincerity rather than profit: and another mentioned reciprocity associated with doing good for others.



...[the most important success factor is] sincerity, not merely for more profit.

- Water contractor business owner



...[our business objective] is to take part in the development process with government... after the conflict everything was destroyed, that is why we focused on establishing a construction business and building new schools, clinics...

- Water contractor business owner

Key enablers: Interviewees identified a range of factors they saw as enabling business success. This ranged from effective business management in terms of managing staff and making good judgements, to professionality and quality of their work to earn trust and respect, to commitment and responsibility in relation to both clients and communities: "We must do good quality work, to gain trust from government and the community". An external enabler through technical support from BESIK was also identified by several respondents.



When we make some profit, it is not my profit, it is the company's, and I reinvest money back in – to rehabilitate a truck, or another kind of reinvestment.

- Water contractor business owner



Before an important project, we must build relations, show our commitment, then we can implement successfully.

- Water contractor business owner.

Key challenges: Key challenges experienced by companies included their interactions with government, strong competition in tenders processes and inability to maintain staff on permanent contracts due to related financial challenges. Government-related challenges included unpredictable customs processes for importing water system components, poor contract management including common and excessive delays in payments, and the need for monetary gifts for local village authorities



[when working for government] it can be a very long time to be paid, four, five or six months, even one year, and nothing paid up front.

- Water contractor business owner



...sometimes we compete, sometimes we win, sometimes not.

- Water contractor business owner

to facilitate smooth relations. More than half of the companies noted that competition in tender processes was one of their biggest challenges. This was due to two reasons; insufficient skills to win tenders and lack of transparency in selection processes, which respondents linked to political interference in the tender processes. Lastly, human resource challenges included being limited to employing staff during 'projects' due to insufficient throughput of work as well as severely delayed payments for government contracts and related financial stress.

Opportunities and barriers for enterprises to play expanded service delivery roles: A precursor to enterprises taking on expanded roles to support service delivery, including supporting operations and maintenance (O&M), is an understanding of the strengths and shortcomings of the current model for service provision in Timor-Leste, namely through GMFs, district and subdistrict government. District-based companies had varied levels of understanding, and national companies shared relatively informed perspectives on service delivery. They pointed out several challenges: lack of asset management records and processes; need for consistent support to GMFs; unrealistic reliance on volunteerism; inadequate government support to GMFs or maintenance; and variable quality of hardware used.

Three possible roles were envisaged for the purposes of this research, however there are other models, or variations of these models, that could also be explored. In general, companies demonstrated interest, enthusiasm and willingness to consider opportunities across these scenarios. The key opportunity and the related barriers for each role are documented below.



In the future it will be different, we will mainly be doing maintenance, as there is increasing demand for this, including private companies and more government contracts.

- Water contractor business owner



Small problems include pipes being broken, taps wearing out quickly – it depends on the project and the quality.

- Water contractor business owner

Providing support to GMFs through a feefor-service arrangement: This role would see a company offering services to GMFs suited to their needs (which may vary from GMF to GMF). Services could include on-call technical maintenance support, regular monitoring (including preventive maintenance), provision of spare parts, financial management and fee collection, or other such services. Companies reported already playing such roles for communities on a pro bono basis. Challenges identified by respondents included a reticence by communities to request assistance from an outsider and a current perception that 'free' support is available from government and a related unwillingness to pay for support.



...in our subdistrict, even though it is not mentioned in the contract, community faced problems to fix the pipes. Then the GMF came to ask us for our help, and we can provide help to fix the system. We are not paid. But because we are in the community so we help to fix the system.

- Water contractor business owner

# Maintenance contracts with government:

A contract to support maintenance of water systems for 3-4 years was considered attractive by six of eight district companies and by all national companies. It was seen to follow on from the existing 'warranty defect period' which requires companies to fix any issues arising in a water system for a prescribed period of time after commissioning. This model was also seen to present challenges in devising arrangements that would appropriately share risks across government, community and enterprise. In particular, uncertainty of maintenance

requirements and related cost predictions requires a stronger evidence base to work from, and the quality of government contract selection, preparation and management would require improvements.



We are ready! If there is a maintenance tender, as a company we are ready to compete. We are ready!

- Water contractor business owner



A well-maintained functional water system

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If we don't have enough maintenance staff then we can recruit some. If a contract is more focused on technical skills then we can hire someone with those skills. If more on social skills then we can hire someone with those skills, or someone closer to the community.

- Water contractor business owner

Specialised maintenance roles: This type of role, for instance concerning pumps, appeared to be the clearest, more appropriate role for private sector in the short term. Amongst both national and district level there were companies with capacity to play this role, and indeed some form of partnership between national and district-based companies would be one possible model for this role.

Conclusion and implications: This research has made evident the increasing capacity and professionalism of water contractor companies within the private sector. It also demonstrates significant challenges that need consideration if companies in the future are to play roles beyond physical construction to support ongoing service provision. On the positive side the companies interviewed, whilst small in size, demonstrated sound business management skills, an interest and skills in providing quality services and were optimistic about increasing their size and role in the future. Their motivations were varied, with few focused specifically on profit or personal gain, and other broader motivations such as contributing to their country's development more dominant. Whilst

a key entrepreneurial trait of risk-taking was not strongly represented, other traits such as proactiveness, need for achievement and innovativeness were evident. A key finding was companies 'readiness' to engage in new business opportunities to support service delivery.

Possible models explored were fee-for-service support to communities, government maintenance contracts and specialised maintenance services. Specialised maintenance services appeared the most obvious next step to trial. Challenges likely to be faced with the other two models included complexities associated with establishment of new relationships and understandings between communities, companies and government; and the need for models to share financial risks and a related requirement for improved data on on-going life cycle costs to support their prediction.

In conclusion, there is clear potential for expanded roles for enterprises in the future in Timor-Leste, however no solution will be without barriers or complexities. Experimentation in this area is needed to continue to develop a shared understanding in the sector of viable service models, including a strong focus on the respective roles of government, enterprises and community and their inter-relationships.



The government should hire companies with expertise to maintain the pumps.

- Water contractor business owner.



Storage tanks for a gravity-fed water system







Rusting water pipes



Household latrine

# KEY FINDINGS ABOUT RETAILERS OF CONSTRUCTION MATERIALS AND LOCAL NGOS

# **Construction materials retailers**

**Entrepreneurship and entrepreneurial traits:** Retailers demonstrated a strong 'need for achievement' and 33% demonstrated some degree of proactiveness. However, these relied predominantly on ad-hoc and rudimentary entrepreneurial approaches to business management and marketing. These included provision of polite and friendly services to customers, price manipulation according to competing retailers, and direct selling and word-of-mouth. Retailers were predominantly focused in responding to demand expressed by customers, rather than generating demand or tapping into potential demand for new products. A strong aversion to bank loans was also evident, which suggests the absence of risk-taking propensity amongst respondents. All interviewees had relied on personal or family savings to invest in the business and none had taken loans from a bank.



If the others reduce the price I'll also have to reduce the price.

- Retailer of construction materials

Pro-social traits: The presence of a specific pro-social business drive to serve the poor was not evident amongst the majority of retailers (92%), although some (33%) expressed a sense of care for their communities and fairness, which indicates a degree of pro-social awareness.



I don't want people to have to go to Dili to buy anything. I want them to have everything here. People spend a lot of money with transport going around buying things. So it's better and easier for them to come to one place.

- Retailer of construction materials

Key business challenges: Respondents reported different categories of challenges including, access to market, human resources, operations and financial related factors. However findings suggest a high level of ease with the current state of the business and its success. The fact that all respondents said that it was easy to maintain a profit from their retail businesses also supports this supposition.

Of the reported challenges, the most commonly reported were access to market challenges, in particular increased competition. Human resource challenges included difficulty in finding staff with the right skills and the time required to monitor staff performance on a daily basis, and operational challenges included water and electricity cuts and challenges associated to the use of manual stocks control systems. Financial challenges in turn included limited access to capital, high interest rates, and difficulties in meeting the loan criteria.

Potential for future roles in sanitation marketing: There are potential opportunities as well as barriers to retailers of construction materials being effective in sanitation marketing beyond the current role of retail of imported sanitation products. Possible roles for retailers in marketing sanitation include

manufacturing of toilet products, retail of locally produced toilet products, installation services, and promotion of toilet products and/or services. As current players in the supply chain of sanitation products, retailers can draw on their business resources and pre-existent networks and systems to reduce costs and access customers. The broad range of products sold by these businesses in addition to construction materials suggests a degree of flexibility in responding to expressed demand for new products, which can be a good starting point for developing agencies approaching retailers for experimentation with sanitation products. However, various barriers to retailers playing roles in marketing and installation were also evident. These related to their lack of awareness of the potential market for sanitation products, hesitancy to consider providing 'services' in addition to products, weak pro-social traits and limited business skills and proactiveness.



We still make profit but it has decreased due to competition. A lot of shops have opened in the last 2 years. Before, there were only 2 shops.

- Retailer of construction materials

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I have an interest in helping the community to achieve health, sanitation and hygiene. Based on our field observation communities don't know how to make latrines and it's a long way to go to the town. So we thought we could help and provide cheap latrines.

– Local NGO



We don't see the demand for this [toilet installation services]. Most people here know how to build toilets or know someone who does.

- Retailer of construction materials

# **Local NGOs**

**Entrepreneurship and entrepreneurial traits:** 

Limited business expertise and business risk taking experience was evident amongst the NGOs interviewed, although some entrepreneurial traits such as proactiveness and need for achievement traits were evident amongst two respondents. Risk-taking traits were not evident amongst local NGOs interviewed. Very little or no risk at all had been carried by these in starting sanitation enterprises, as their INGOs partner had largely supported these investments.

Pro-social traits: A pro-social motivation to improve the health of communities and address the needs of the poor was clear amongst the majority of the NGO leaders (80%) and strongly underpinned their engagement in the provision of sanitation products and services. Contrast was found amongst NGOs concerning their pro-social purpose however. Whilst some NGOs were able to clearly articulate their pro-social vision and mission, and the process used to develop and review these, others, were more vague in articulating this and appeared to be more strongly driven by INGO contracting opportunities rather than a clear and welldefined pro-social purpose.

Key business challenges: Challenges reported by NGOs who had engaged in selling sanitation products as a business activity were all related to access to market. These included low demand for sanitation products and services, and concerns with foreseen market saturation challenges. Factors perceived as contributing to low demand included a legacy of toilet subsidies, which left an expectation of

free toilets from communities, and a lack of affordable products of equivalent quality to imported products.



People don't need a toilet all the time. Only after ten years when it's damaged and needs to be replaced. - Local NGO

Potential for future roles in sanitation marketing: Like with the retailers of construction materials, there are potential opportunities as well as barriers to local NGOs being effective in sanitation marketing. On the one hand, their high dependence on external support from INGOs to initiate their sanitation businesses and challenges faced so far raise questions about their future viability

in the absence of such support. On the other hand, there is considerable complementarity in the outlook, motivations and experience of local NGOs as opposed to retailers. Their local experience in the WASH sector and pre-existing links with rural communities, as well as strong pro-social drive, provides an opportunity for them to extend their existing roles in the WASH sector. These include supporting roles such as provision of information about the needs and preferences of the market, product development and innovation, technical training on toilet production, facilitation of community bulk purchases and traditional lending mechanisms. linking customers to micro-credit institutions, and facilitating partnerships between retailers, masons, and community leaders.



Village setting in Timor-Leste

Conclusion and implications: This research examined the motivators, interests and business skills of both retailers and local NGOs to play roles in sanitation marketing. As such, it provides insight into the risks and viability of the proposed roles, and highlights key considerations for how to improve the 'supplyside' for sanitation in Timor-Leste.

We found potential opportunities as well as barriers to both retailers of construction materials and local NGOs playing being effective roles in sanitation marketing. In comparing the different characteristics of these organisations, it was found that certain traits that pose challenges to one, contrast as opportunities to the other, which raises the possibility of complementary roles, and shared responsibility arrangements between two actors. For example, retailers have access to pre-existent business assets, networks and systems that local NGOs don't have. These resources can be drawn upon to reduce costs and access customers. Local NGOs in contrast. given their previous WASH work in rural areas, are likely to have a greater understanding of the sanitation market in rural areas than retailers. as well as easier access to customers within rural communities than retailers. Further, their stronger pro-social drive points to a higher likelihood of these having a higher motivation to overcome challenges in reaching the poor or market saturation issues than retailers.

Based on this complementarity of characteristics, there is a range of possible roles retailers could play. These include manufacturing, retail and promotion of toilet products, and installation services. NGOs in turn, Manufacturing Retail

Supporting roles
Information about market needs and preferences, product development and innovation, training, access to capital and customer's credit, access to networks

Installation Promotion

Possible roles for enterprises to support sanitation service products and services

are well placed to play supporting roles such as provision of information about the needs and preferences of the market, product development and innovation, technical training on toilet production, facilitation of community bulk purchases and traditional lending mechanisms, linking customers to micro-credit institutions, and facilitating partnerships between retailers, masons, and community leaders.

However, it's important to note that this comparison between retailers and local NGOs is based on dominant characteristics observed within each of these groups. Nuances were found within each of these groups regarding certain characteristics, which emphasises the importance of assessing potential organisations and their respective

proposed roles on a case-by-case basis. Their entrepreneurial capacity and traits, pro-social motivations, and challenges need to be assessed and matched to appropriate roles. Business model considerations should consider these assessments and allow for flexible combinations of different roles.

Further, it should be highlighted that some of the challenges experienced to date by NGO led sanitation businesses such as the lack of affordable products tailored to the rural market, can be transversal to any actor, and therefore are likely to be experienced by retailers as well. Hence, attention to these challenges is required and should not be overlooked or assumed to be solved by approaching retailers to play a role in sanitation marketing.

Lastly, attention is also required to the way retailers are approached. This should focus in raising retailers' awareness of the potential market for sanitation products and potential profit from that, as well as the impact their businesses could have towards health and socio-economic outcomes. They may also need to provide tailored support depending on the each retailer's entrepreneurial characteristics and roles their business would be expected to play in marketing sanitation. These may include technical training, marketing and promotion support, access to market information such as customer preferences, financial management support, and access to capital, and general business management mentoring. Further, development partners may also need to tap into other types of motivations within retailers beyond profit and pro-social motivations to develop incentives such as for example status (e.g. prestige and recognition) and solidary motivations (e.g. socialising and camaraderie).

This summary report draws from the following research report: Willetts, J. and Murta, J. (2015) *Motivations, barriers and opportunities for water and sanitation enterprises in Timor-Leste*, Enterprise in WASH - Research Report 6, Institute for Sustainable Futures, University of Technology Sydney



'Enterprise in WASH' is a joint research project led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney, which investigates the role of private and social enterprises in the delivery of water, sanitation and hygiene (WASH) services for the poor. For other Enterprise in WASH publications, see www.enterpriseinwash.info

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