Planning for Food Security in Urban Areas: A case study of the City of Charles Sturt, Adelaide

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Abstract: Food security has emerged as a trending issue in urban areas with the threat of climate change, unhealthy lifestyles, and reduced open space in urbanised environments. It is assumed that this is caused by a number of economic and policy factors, as well as urban planning and transport planning implications and a general lack of knowledge and skills for nutrition and household budgeting. The aim of this paper is to understand whether an integrated approach that incorporates the ideas of planners, urban designers, landscape architects, health professionals and the food industry could improve food security. The City of Charles Sturt is used as a case study. A number of key stakeholders of food security have been interviewed to determine the key challenges and recommendations for food security both at the state and local government level.

A food security policy has been identified as the key solution for the City of Charles Sturt to improve food security in the area, but it is understood that the key to its success is the knowledge and awareness of the community and their adoption of the initiatives. There is a need to adopt an integrated and multi-disciplinary approach to food security with several government departments sharing knowledge and collaborating within their respective roles, across the three tiers of government and community.

Introduction

Food security is becoming increasingly relevant topic across the world especially in urban areas. It has become a current priority to address the challenges of climate change and rising food prices in urban areas. Increasing food production in urban areas has limited potential but planning could play important role by providing infrastructure and appropriate land use distribution (iied 2013). The World Food Programme and Food and Agriculture Organisation (FAO) of the United Nations support international food security. The World Food Summit was hosted by the United Nations in 1996, which commenced the campaign to encourage all sectors of society to achieve global Food security (NSW Health 2003, p.5). This transpired into the Rome Declaration on World Food security and the World Food Summit Plan of Action.

The Gillard Government announced at the 2010 election that it was ‘committed to developing a national food plan’ (Ludwing 2011). The food plan was published in 2013 and the aim of the food plan to integrate ‘food policy along the whole food supply chain - from paddock to plate (Ludwing 2011). Main objectives of the plan were be to investigate the potential risks to Australia’s Food Security, identify methods of contributing to global food security, increase the access of all Australians to a safe and nutritious food supply, and support the food supply chains’ long-term economic, environmental and social sustainability (Commonwealth of Australia 2011). The National Heart Foundation published the report Food Sensitive Planning and Urban Design that provides strategy to tackle problem of cities including a topic which has little precedent as an agenda for the planning of cities in Australia (National Heart Foundation of Australia 2011).

The South Australian Strategic Plan indirectly encourages local food production, or outcomes that it may achieve, in a number of policies. Its target 1 aims to increase the use of community public spaces and targets 23 and 24 aim to increase the number of people participating in social, community and economic activities, including formal and informal volunteering (Government of South Australia 2011, pp. 27, 33). Target 40 suggests a growth in the contribution to the food industry and target 59 aims to reduce greenhouse gas emissions by 60% (to 40% of 1990 levels) by 2050 (Government of South Australia 2011, pp. 39, 47).

Only a few among the nineteen metropolitan Local Government Areas in metropolitan Adelaide appear to be acting on food security issues. The City of Charles Sturt, a Local Government Area in metropolitan Adelaide’s west, has been chosen as a case study for this research. Suburbs such as Fulham Gardens and Findon located in this council were dominated by farming and market gardens from as early as 1911 ‘until suburban development took off in the 1960s and 70s’ (City of Charles Sturt n.d.). With fully developed suburbs, it is of interest to investigate how sustainable local food supply could be integrated in established suburbs.

There are many definitions of food security but this paper adapt the definition provided by the Food and Agriculture Organization (1996) which states that:
‘Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’.

Even though the planning system has a role to assist in providing the basic needs of society, food is often left out of the equation (Morgan 2009, p. 341). This link between urban planning and food security is becoming increasingly recognised. Pothukuchi & Kaufman (2000, p. 115) identify that urban planners believe their role is to ‘reactive rather than proactive’ and that there is no critical push for food planning compared to issues such as affordable housing. However, given that this study was undertaken in the United States, it is important to find out if food security is, or can be, a role for urban planners in Australia.

Born and Purcell (2006, p. 200) argue that whilst the current economic-driven capitalist food system with large-scale machinery produces large crop yields, it has led to ‘increased injustice, environmental degradation [and] food insecurity’. The current food system is also too dependent on non-renewable energy resources for production and transport. The distance that food travels from field to table, ‘Food Miles’, has increased dramatically over the last three decades (Born & Purcell 2006, p. 203). This is consequently having a large impact on climate change from the use of machinery and the emissions resulting from transporting food (Gaballa & Abraham 2008, p. 1).

Budge and Slade (2009, p. 15) identify that land use planning has the ability to manage the development of land in order for the community to benefit. For example, planning can limit particular land from being used for non-agricultural uses, allocate land for agriculture, designate areas for shops including food outlets, and can increase the overall access to goods and services. Budge and Slade (2009, p. 15) suggest that local food needs to be within walking distance or be accessible by public transport. It is also believed that larger retail and supermarket centres are generally car dependent, so there is a general need to create and maintain local food outlets to increase the access and availability of fresh food in communities (Budge and Slade 2009, p. 15). This identifies that the planning system can have both positive and negative impacts on the food system as a whole, but most importantly, it recognises the potentially important role for the planning system to address food security issues.

Friel (2010, p. 129) argues that food security has become a growing issue because of a cultural shift from a plant-based diet to a diet of unhealthy, processed meat and dairy products. This has been confirmed by the Australian National Health Survey 2004-05 which revealed that many adults consumed less than the recommended five serves of vegetables and two serves of fruit each day (Commonwealth of Australia 2008). Friel (2010, p. 130) argues that poor nutrition can lead to premature death, chronic heart conditions, obesity, cardiovascular disease, type 2 diabetes and cancer, and can be accountable for approximately one quarter of Australia’s disease burden. This indicates that there is a real concern for the health of the future population as well as the state’s economy and a need to shift back to a healthier lifestyle, including a more plant-based diet. Friel (2010, p. 131) also identifies that with the price of fruit and vegetables rising, mostly due to a lack of availability, healthy diets may be becoming too expensive for households, especially those that are welfare-dependent.

There is currently no integrated approach that incorporates the ideas of urban designers, landscape architects, health professionals and the food industry with Planners who may be vital to make food security a reality. Therefore, the question of how to combine the ideas of industry professionals with the practical implementation approach of planners – who generally do not consider the food system, is a key issue. The aim of this paper is to evaluate weather integrated approach that incorporates the ideas of planners, urban designers, landscape architects, health professionals and the food industry could improve food security. Key stakeholders of food security directly involved with Charles Sturt Council and urban designers were interviewed to capture their opinion on how these issues may be addressed. The ethics approval for the research was obtained from UniSA and interview was conducted in person by one of the researchers. The people interviewed for the research is presented in table 1.
Table 1. List of people interviewed

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Position and Organisations</th>
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<tbody>
<tr>
<td>Ms. Kerry Hallett</td>
<td>Principal Health in Planning Officer, Government of South Australia</td>
</tr>
<tr>
<td>Mayor Kirsten Alexander</td>
<td>Mayor, City of Charles Sturt</td>
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<tr>
<td>Ms. Lisa Stevens</td>
<td>Policy Planner, City of Charles Sturt</td>
</tr>
<tr>
<td>Mr. Mark Hannan</td>
<td>Environmental Management Officer, City of Charles Sturt</td>
</tr>
<tr>
<td>Ms. Caro Mader</td>
<td>Community Development Coordinator, City of Charles Sturt</td>
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<tr>
<td>Ms. Mary Duncan</td>
<td>Obesity Prevention and Lifestyle (OPAL) Advisor, City of Charles Sturt</td>
</tr>
<tr>
<td>Mr. James Hayter</td>
<td>Director/Landscape Architect, Oxigen</td>
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</tbody>
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This research is centered on a case study of the City of Charles Sturt, a metropolitan council in Adelaide. Harkness & Newman (2003, p. 89) have suggested that considering its low ranking on the SEIFA index of disadvantage and a history of high European migration and market gardening in the area, and due to the high proportion of homeowners in the area, any community initiatives may have a greater chance of success. The relatively low level of SEIFA index suggest that the area is potentially vulnerable to food insecurity and there is substantial evidence that this issue should be investigated. It also a good case study because both the City of Charles Strut and community appear to be committed to food security and aim to improve their community gardens and increase local food production and availability.

**Results and discussion**

**Roles and Responsibilities for the Hierarchies of Government**

It is considered that all three tiers of government have a role in food security in. At a national level it is more so about policy and global trade, especially with the proposed directions of the National Food Plan and the Food Sensitive Planning and Urban Design by the Heart Foundation. At a State level, there seems to be a potential for supporting regional communities, but also for introducing policy in many government departments. There appear to be some policies encouraging food security, albeit quite subtle, in the 30-Year Plan for Greater Adelaide, South Australia’s Strategic Plan and the Eat Well Be Active Strategy. If made more explicit to food security, these could produce the opportunity to enhance the support of the local governments to rigorously act upon the issues.

Generally, Local Governments appears to be the favourable and most effective tier of government to successfully implement food security strategies. This conclusion is supported by the UNCDF (2010, p. 20) as Local Governments are closest to the people and have a better idea of how such strategies may be received, leading to the community’s desired outcomes being delivered more effectively. Also, acting for their respective community, Local Governments are likely to have more of an interest in the micro-planning of such initiatives and be able to measure whether or not they are delivering the desired outcomes.

Whilst organisational structures may differ among Local Governments the most relevant department to investigate these issues at the City of Charles Sturt appear to be the Department of Community Development, Environmental Management, and Open Space and Recreation. However, as mentioned by Kerry, the requirement for Local Governments to produce a Health Plan under the new Health Act provisions presents a huge opportunity to include food security policies. This could place food security high on the agenda for Local Governments to implement strategies and initiatives to assist in improving food security.

**The Role of Planning in Local Government**

It is a view of Mayor Alexander that Local Government planning is not well equipped to be dealing with food security at present. She believes that more changes would be need to be made at the state and
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federal level before the local government planning can play an important role in addressing food security issues. Planning Reforms of the SA Planning system may have some impact, particularly with changing governmental roles and new legislation. An overhaul of the current Development Act 1993 may be required to achieve this because at the moment, all of the power sits with State Government officials and the Minister who is not necessarily in touch with local communities at a Local Government level. However, whilst the planning legislation does not place food security as a high priority, Mayor Alexander believes that it could be investigated further within the City of Charles Sturt to determine what the role of the planning department could be. Similarly, Kerry also believes that planning cannot have a direct response to resolving food security issues; however, there is still a role for planners.

It was suggested that food security must be incorporated in the council’s Development Plan, but would also need to gain support from the higher levels of the council before this becomes a reality. If new developments are not planned with provision for community gardens, open space areas and large balconies, then the future occupants have an increased vulnerability to food insecurity from the moment they move in. According to Kerry planning has a role to educate, facilitate and enable such initiatives for the market and developers to deliver. The Mayor also mentioned that she has experienced builders and developers asking the council how they can make their developments more sustainable as there is a large market for it, but there is often the knowledge is not there to support or assist them. This shows that there is potential for planning to strengthen its position on food security issues.

Challenges
All of the interviewees identified number of challenges that are, or may, affect the success of food security initiatives. The key issues are presented below.

Maintenance
One of the biggest challenges in tackling food security is both the time and financial costs of maintaining any fruit, nut or vegetable plantings. It is suggested that councils could plant edible landscaping species, such as fruit trees, perhaps only where a community group requests them and are willing to care and harvest them (Grayson 2010). One of the downsides of council maintaining them is that often the staffs are not trained in the maintenance of these species which require pruning, pest management and harvesting which is not common in most other ornamental species planted by the council (Grayson 2010).

Maintenance appears to be the biggest concern particularly in a top-down system where the council or the developer may introduce such species within the community. Therefore, a bottom-up approach where the community is push for such initiatives may not be as much of an issue. This is because it is anticipated that the community already support and would take responsibility for maintaining the plants. As suggested by Mayor Alexander, some form of ‘Adopt-A-Tree’ program or commitment from residents in a street to look after the species may be required.

Public Liability and Risk Management
The potential for any public liability claims were also raised as a big challenge. James suggested that this was becoming less of an issue and the council appear to be becoming more lenient as increasing evidence of successful food security projects both nationally and internationally. Mark agrees that whilst public liability is a challenge, every risk requires a management strategy and each proposal would need to be assessed on its merits and what the ratio of positive to negative outcomes are. For verge planting, these risks would include fruit falling onto parked cars and fruit left lying on the footpath causing pedestrians to slip. However, Grayson (2010) suggests that this is already a problem to some degree with seasonal leaf fall of ornamental street trees as well as dropping seed pods, and whether the material that falls is edible or not, the risk is much the same. One solution to this is to glean the fruit before it falls, which is becoming less of an issue and is not a high priority, Mayor Alexander, some form of ‘Adopt-A-Tree’ program or commitment from residents in a street to look after the species may be required.

Funding
James mentioned that it is sometimes difficult to get clients or the councils to invest in food security initiatives in their development. This may be because of the lack of commitment to the ongoing maintenance involved with edible landscaping, or perhaps the lack of understanding of the benefits of such initiatives. Caro suggested that food security must be considered in the annual budget for the City of Charles Sturt. She suggested that whilst there will be a Community Gardens Policy in Council
soon, without the funding to investigate opportunities or implement the strategies, the objective and aims of the policy will not be fulfilled.

Montague (2011, p. 31) suggests that ongoing funding is crucial to the success of food security projects. It is recommended that a National Food Security Council be established which would have the ability to co-fund local, state and territory food security projects (Montague 2011, p. 32). At present, the Australian Government's Healthy Communities Initiative has committed to a total of $61.5 million of funding over five years from 2009-10 for 92 Local Government Areas across Australia (Commonwealth of Australia 2012). These grants are provided to support a Healthy Communities Coordinator within Councils to oversee, coordinate and implement food security initiatives, as well as to subsidise the costs of such initiatives, purchase or run community programs, and to purchase or subsidise training for community members to run community programs (Commonwealth of Australia 2012). Eleven of these councils funded under the program are in South Australia, but the City of Charles Sturt has been unsuccessful so far.

It could be suggested that there needs to be much more education and awareness around the food security issues particularly, as Mayor Alexander suggested, the majority of Adelaide population have not experienced a critical threat to the availability of food. Increased awareness in the community as well as amongst key decision makers at the council could increase food security priorities and for it to be allocated funding in the next annual council budget.

The Planning System
Generally, the interviewees were not overly optimistic about the potential for the planning system to have an influence on food security. There appears to be limited potential in having food security polices in the Development Plans for a number of reasons. This is due to the difficulty in implementing any strategy as well as testing and measuring the strategies and ultimately because food security is not a form of development defined in the Development Regulations 2008.

There appears to be some potential for food security to be incorporated in the Development Plan in the Desired Character Statements or as Objectives within the general modules or particular zones. In doing so, it will not be mandatory to be included in all development, but it would promote that the City of Charles Sturt generally supports food security initiatives. This is much like the existing references to including rooftop gardens in new developments and would relate back to the Council’s Community Gardens Policy and potential future food security policy. One definitive fact that Lisa did argue was that whilst the planning system and the current Development Plan does not explicitly encourage food security initiatives, it also does not discourage these initiatives. The only initiative, so to speak, that may be discouraged is the keeping of non-domestic animals in residential areas. However, this does not discourage vegetable gardens and the keeping of chickens, which are two viable initiatives.

At a state level, the 30-Year Plan for Greater Adelaide appears to be limiting the potential for personal food security initiatives. With the large focus on infill development and higher density development in the form of smaller allotments, row housing and apartment blocks, backyards will reduce in size and in some cases be non-existent. This will mean that there may be a larger focus on how to incorporate food security initiatives into new developments through balcony and rooftop gardens, living walls, and additional public open space to cater for urban agriculture.

Lifestyles
A change in lifestyles over the years was also mentioned as a potential challenge to food security. Lisa suggested that a lot of family household structures have changed, with homeowners generally working longer hours compared to the vision of a few decades ago where one parent would usually stay home and do house duties. This shift has reduced the opportunities for households to spend time gardening, which was so common decades ago, leading to homeowners looking to low-maintenance plant species. Possibly a cause of this is a lack of general interest in gardening, as well as the increase of other hobbies and recreation activities such as entertainment, restaurants and cafes, and technology, including the accessibility of these with private transportation. This may have also led to a lack of skills and knowledge about the basics of gardening in the younger generation (McDonald 2005). Consequently, it appears that education is key, not only to promote what food security is, but to also teach the basic skills of gardening and increase the confidence in budding gardeners to use their skills to grow their own produce at home.
Recommendations

It was identified that the State Government could assist with increasing food security largely by policy changes that would give Local Governments the support to enhance food security. It was suggested that State Government needs to investigate ways in which food security initiatives can be embedded within planning regulation, policies and guidelines. Amendments to the State Government planning legislation, such as the Development Act 1993 and Development Regulations 2008, to position urban agriculture more strongly were also identified as a critical need for the success in implementing food security initiatives. In State Government planning legislation, there may be opportunity to simply recognise food security without specifically acting upon it in the short-term. It was also suggested that planning tools such as the 30-Year Plan for Greater Adelaide and the Planning Policy Library could position food security initiatives as a high priority and explicitly mention it more frequently throughout. There were also suggestions that the State Government should reconsider the minimum public open space provision of 12.5% for new land divisions due to expected high density living that is the drive of the 30-Year Plan for Greater Adelaide.

State Government also have a role to play in acquiring funding from Commonwealth Government to fund large-scale food security projects, or to redistribute to Councils for them to fund their initiatives. Additionally, it is also suggested that State Government needs to link with the private sector so that funding or initiatives can come from there as well. Education and advocacy is also considered an important role for the State Government, and so it should use its authority to encourage stakeholders and Local Governments to address this issue where applicable.

Recommendations for the City of Charles Sturt

This includes both practical and policy recommendations, as it is considered through this research that Local Government is best positioned to act on food security issues.

Access to fresh food

The interviewees identified two key recommendations for the City of Charles Sturt to increase access to fresh food. This included having a productive food garden at every community centre and to host frequent fruit and vegetable swaps in every suburb. Another suggestion could be to support school gardens and investigate the opportunity to make these accessible to the community. One way to promote equitable access to community gardens and edible landscaping could be to place them close to transit corridors. This has the potential to make them easily accessible to those without a private vehicle, and considering the 30-Year Plan encourage residential growth along transit corridors, there could be a high enough population there to support them. However, locating such initiatives in reserves and parks including the linear park along River Torrens could also provide suitable opportunities for these initiatives.

As practiced in Vancouver, there are two strategies that could have potential in the City of Charles Sturt. This is the ‘Grow-A-Row, Share-A-Row’ program which encourages gardeners to grow an extra row of vegetables to donate to those in need (City of Vancouver 2011). The Neighbour Backyard Gardens program in Vancouver may also have potential to be investigated within the City of Charles Sturt. This allows a household to register and share their own underutilised front yard or backyard with someone who wants to grow their own food, but may not have land or resources to do so (City of Vancouver 2008). Likewise if a household was granted a permit to undertake works on council land, such as planting on a road verge, then this may be able to be listed on the register as well. Both of these initiatives appear to be relatively cost-effective and may only include the setting up of a register on the City of Charles Sturt website.

Health and wellbeing

Considering the strong link between health and access to fresh food, it was identified that there is enormous potential to increase food security through Local Government Health Plans. This will assist in placing food security as a priority and acknowledge the positive health and wellbeing impacts that it may have. This is not limited to physical health, but also includes environmental health. By increasing local food production, there may be a reduced need for importing food from other areas and thus eliminating the impact of carbon emissions from the transportation of food, or ‘Food Miles’.

Leadership and education

It is suggested that both State and Local Government have a role to play in bringing awareness to food security issues. It is believed that these issues can be largely overcome by increasing awareness and political and civic leadership (Siauw 2011). The interviewees identified two main recommendations for the Local Governments to take a leading role in bringing awareness to food
security issues and to educate the community. This is potentially part of a two-step plan to promote and educate the community on food security issues, but also to host cooking and gardening workshops, film screenings and other events to educate the community on how to reduce their vulnerability to these issues.

Administrative
The City of Charles Sturt may need to investigate support systems that will assist in improving food security in the area. This may include applying for State and Commonwealth Government funding for new food security initiatives and projects. It may also be possible to use this funding to continue to support and subsidise any work of the existing community initiatives to reinforce that the Council recognises the contribution they are making to food security in the area. Likewise, the Council may need to encourage community groups to do the same so that they can receive additional financial support, which the Council may not be able to offer.

It is also recommended that the City of Charles Sturt develop a ‘Food Security Officer’ role within Council to manage food security projects and to undertake the investigative research that is recommended. It was also suggested that the City of Charles Sturt should link with the private sector to encourage Food Security.

Further research
There are a number of investigative projects that may be required to be undertaken because food security is still a relatively new concept and there is little research about how it can be practiced at the level of Local Government. Therefore, the City of Charles Sturt may need to investigate and analyse its current organizational structure and determine which departments, including Planning, may be able to address food security issues.

There may also be a potential need to review the Development Plan and the prescribed minimum allotment sizes within each zone. Smaller allotment sizes could be limiting the opportunity of private open space that could otherwise include a food garden. Therefore, it may be possible to identify the areas where soil quality is high and encourage food production in those areas as a priority. Not only this, but the site coverage policies may need to be revised and there may be scope to add in a floor area ratio provision. This would limit the amount of floor area that a dwelling could utilise, particularly on smaller allotments, and thus encourage dwellings to be built over a number of levels with a smaller footprint, whilst still achieving the same amount living space.

It may also be possible to investigate the potential to introduce Urban Agriculture Design Guidelines as a tool to assist applicants to include food security initiatives within new developments. This may include initiatives for rooftop gardens, green walls, food gardens in front yards and backyards, and larger balconies.

Food security policy
Ultimately, the important next step for the City of Charles Sturt is an overarching food security policy. This was suggested by a number of interviewees, and this policy would have the potential to combine many of the above mentioned recommendations into a formalised strategy to achieve food security outcomes. Given the opportunities that such a policy could present, the paper developed a food security policy that may have the potential to be adopted by the City of Charles Sturt. This has taken into account the recommendations of the interviewees as well as relevant strategies that are being employed in other cities as investigated in the case study research at the beginning of this project. There are many are less expensive strategies in the policy that are particularly appropriate for the City of Charles Sturt considering that food security is not funded in the current budget.

Conclusions
Food security appears to be considered in an adhoc way in Australia, and this is perhaps due to lack of policy and awareness of the issue. The National Food Plan is set to tackle food security as a whole, but does not appear to have viable strategies focussed at the local level. The State Government is believed to have the tools to develop state-wide food security policies and to coordinate government departments to support it. Currently, the 30-Year Plan for Greater Adelaide and the South Australian Strategic Plan do not make explicit mention to food security. However the plans do encourage strategies that could be considered indirectly relatable. At the local government level a number of
metropolitan councils appear to support food security to various degrees but at present there is no policy that mandates food security.

Possible failures of the development plan were identified as the minimum private open space provisions and maximum site coverage provisions, which could be limiting backyard sizes and the opportunity for backyard food production. A suggestion for planning is to consider a provision for 'Floor Area Ratio' which could allow for smaller building footprints, and thus larger private open space areas for increased opportunity for backyard food production. It was also identified that there are a number of physical initiatives within the City of Charles Sturt that could be further developed, such as food swaps, community gardens, community centre programs, and a number of other community projects such as verge planting, backyard and front yard food production, and food stalls.

The role of planning is also considered to be education and providing tools such as Urban Agriculture Design Guidelines with necessary information on food security. Urban planners are suggested to be the key players for healthy cities and hence food security should be a priority for the profession.

It is important to recognise that there is a great need for an integrated approach to improving food security. It is considered that improving food security requires an interdisciplinary team that include, but is not limited to, urban planning, community development, environmental management, public health, landscape architecture, urban design, and recreation. This needs to be supported and integrated at the federal, state and local government level for a complete approach to both policy and physical initiatives.

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