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ECONOMIC IMPACTS OF *SWEET TOOTH* SEASON ONE IN NEW ZEALAND

A REPORT FOR THE MOTION PICTURE ASSOCIATION &
THE AUSTRALIA-NEW ZEALAND SCREEN ASSOCIATION

APRIL 2023



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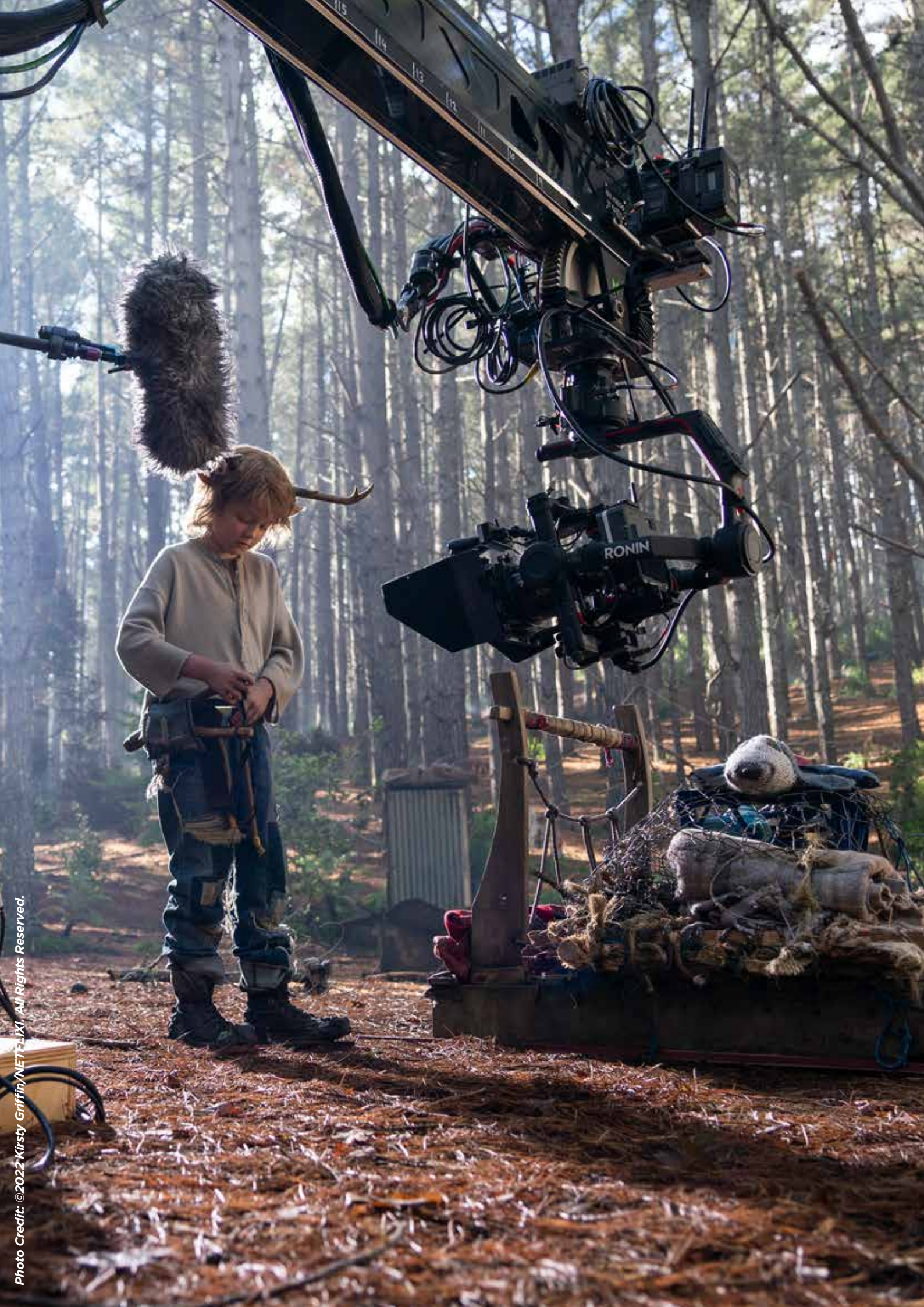


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EXECUTIVE SUMMARY

“Sweet Tooth” is an adaptation of a comic book series created for DC by Jeff Lemire and chronicles the protagonist’s experiences as a hybrid human-animal navigating a post-apocalyptic world. Commissioned by and streaming on Netflix, Season One of the TV series was produced by Warner Bros. Discovery and filmed in New Zealand, specifically on location in Auckland, Waikato, and Otago. The production generated considerable economic activity across the country. The show’s production also supported activity in a wide range of industries through its procurement, and as those employed by the production and those employed by its supply chain spent money in the wider economy.

This study, commissioned by the Motion Picture Association (MPA) and the Australia-New Zealand Screen Association (ANZSA), analyses the production’s total economic impacts in New Zealand in 2020, when most of the first season was filmed. The study also considers the wider impact on the New Zealand economy during the COVID-19 pandemic, as the production boosted local economic activity during a time when most business activity was halted on a global scale.

In 2020, **production of Season One of *“Sweet Tooth”* resulted in total spending in New Zealand of over NZ\$46 million.**

Spending with over 950 local suppliers of goods and services was the main expenditure item, making up 54% of the total expenditure at over NZ\$25 million. The majority of this spending was done in Auckland and Waitakere. The remaining 46% of spending measured at NZ\$21 million and was spent on wages and salaries for local production crew and other labor.

Oxford Economics calculates that expenditure by **the production of Season One of *“Sweet Tooth”* stimulated over NZ\$66 million in contribution to New Zealand’s GDP in 2020.**

We find that for every NZ\$1 million that the production’s own activities contributed to the economy, its expenditure supported a further NZ\$2.1 million along its supply chain and through the payment of wages.

We find that the expenditure undertaken by **the show’s production stimulated a total of 1,180 full time and part time jobs across New Zealand in 2020.** For every 100 people the production directly employed, its expenditure stimulated another 47 jobs across the country.

NZ\$66m

Total contribution to New Zealand’s GDP supported by Season One of *“Sweet Tooth”*

1,180

Full time and part time jobs supported across New Zealand as a result of Season One of *“Sweet Tooth”*

THE ECONOMIC IMPACT OF SWEET TOOTH SEASON ONE IN NEW ZEALAND

PRODUCTION EXPENDITURE



950
New Zealand
businesses
supported



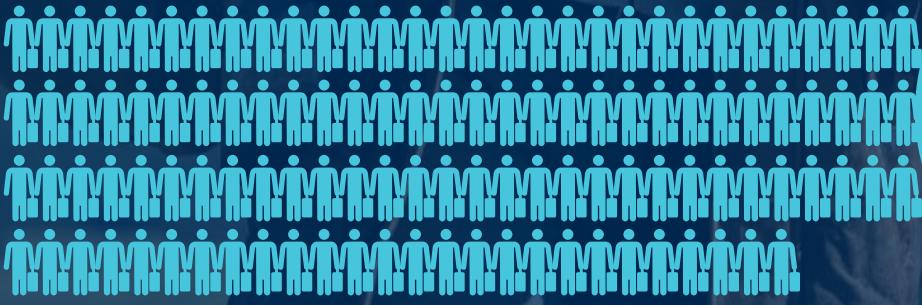
800
direct full time
and part time
jobs created

TOTAL IMPACT

\$66m
total
contribution to
New Zealand
GDP



1,180
total full time
and part time
jobs
stimulated



1. INTRODUCTION

Commissioned by Netflix and produced by Warner Bros. Discovery, “*Sweet Tooth*” is a TV series based on characters created for DC by Jeff Lemire that follows the adventures of Gus, a human-animal hybrid, in a post-apocalyptic world. Having spent his childhood sheltered from the outside world, the first season chronicles his journey out of the safety of his home and on his quest to find his mother.

The filming of season One of “*Sweet Tooth*” initially started before the COVID-19 pandemic. The pilot episode was filmed in 2019 and the rest of the first season was filmed during the first year of the pandemic. While many other filming activities across the world had been put on hold due to risks associated with working on large scale productions, “*Sweet Tooth*” was one of a handful of filming projects that was allowed to resume operations in New Zealand. This was largely due to the country’s relative success in limiting the spread of COVID-19 and largely benefited the local communities in which filming occurred.

Oxford Economics was engaged by the Motion Picture Association and the Australia-New Zealand Screen Association to conduct an independent economic impact assessment of the production of the show on New Zealand’s economy. For the study, Oxford Economics used data from Warner Bros. Discovery to estimate the economic impacts arising from the production of Season One.

The broader impacts of the TV series are expected to persist as the series produces additional seasons. The show has been renewed for Seasons Two and Three, and assuming that the upcoming seasons have a similar production budget to that of Season One, the economic impacts are expected to be in line with those presented in this study.



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2. PRODUCTION SPENDING

When a TV show shoots on location, it brings with it jobs, revenue, and related infrastructure development. Physical productions provide an immediate boost to the local economy, fostering job creation and innovation in other industries across the production supply chain. In 2020, production of Season One of *“Sweet Tooth”* resulted in **total spending in New Zealand of over NZ\$46 million.**

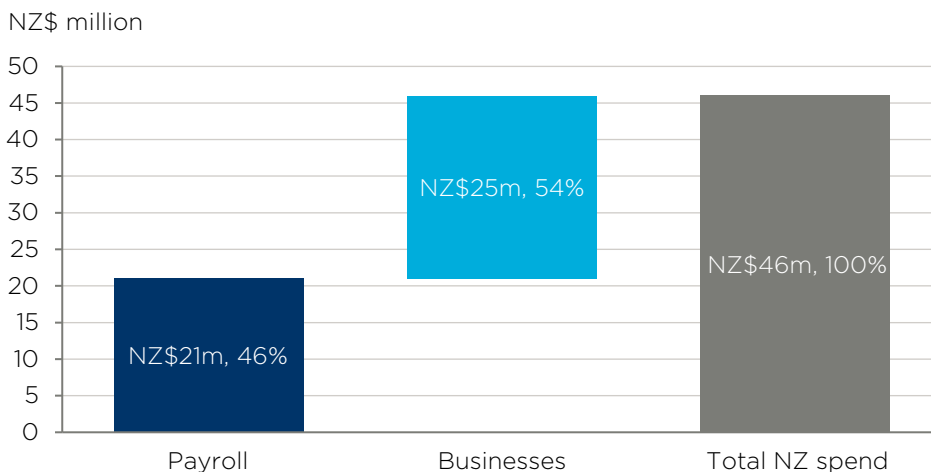
Spending on New Zealand based suppliers of goods and services was the main expenditure item, making up 54% of the local expenditure (see Fig. 1). The remaining 46% or NZ\$21 million was spent on wages and salaries for the local production crew and other labor.

NZ\$46m

Direct production expenditure in New Zealand

Spending on production crew and qualifying labour was NZ\$21 million, while local spending on goods and services was NZ\$25 million

Fig. 1: Production spend of Season One of *“Sweet Tooth”* in New Zealand, by type



Source: Warner Bros., Oxford Economics

2.1 BUSINESS SPENDING

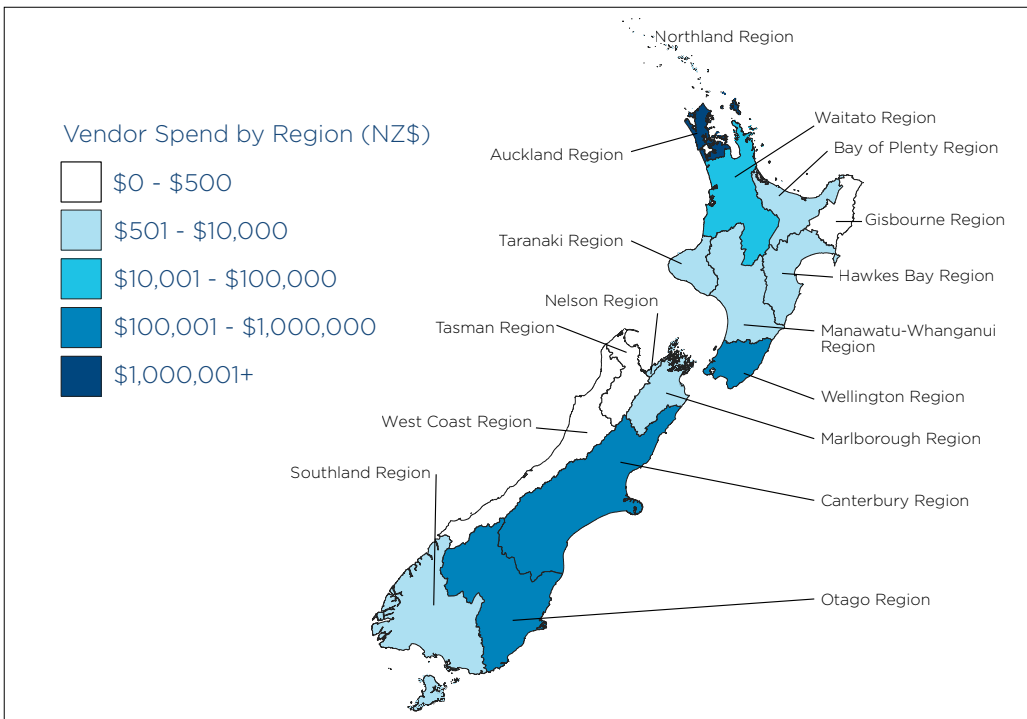
Season One production spending engaged over 950 businesses all over New Zealand. The cities that received the largest amounts in business spending were Auckland and Waitakere, both part of the greater Auckland region, with a combined spending of over 85% of all business spending (see Fig. 2).

The production of TV shows typically relies on a wide range of goods and services, engaging multiple local businesses. The largest category of spending was towards rental activities

directly supporting the production (including stage, studio, and production equipment rentals), and other specialist services (lighting specialists, legal fees, cleaning services, and security services).

Other production supporting activities include the procurement of props and costumes, as well as the purchase of numerous supplies required to build and maintain the production set. Additionally, many local businesses were engaged to provide services for cast and crew members, including accommodation, transportation, and food services.

Fig. 2: Map of spending of locally based businesses by region

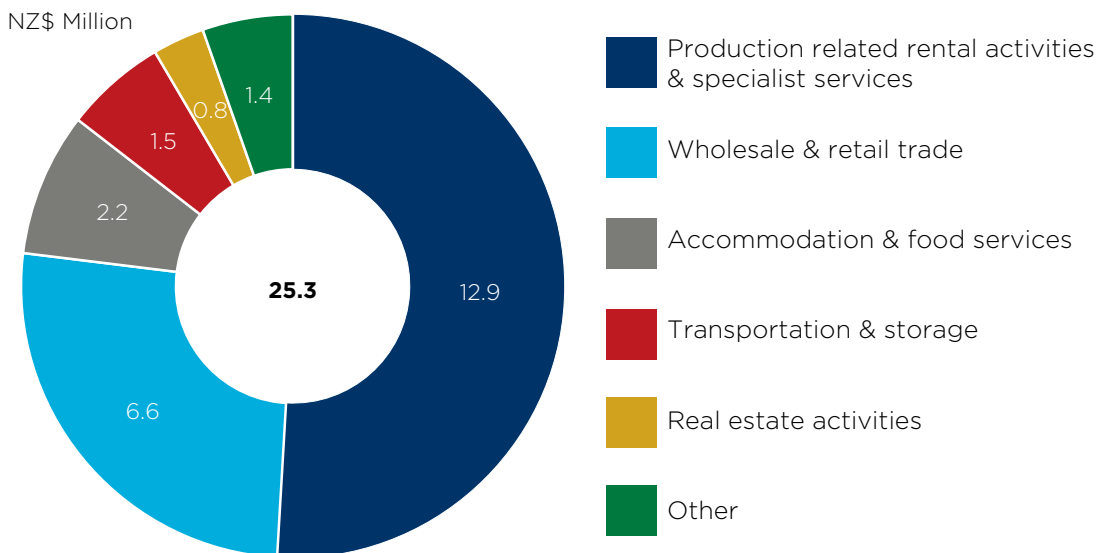


Source: Warner Bros., Oxford Economics

2.2 PAYROLL AND EMPLOYMENT

The production of “Sweet Tooth” employed many cast and crew members local to New Zealand. The majority of the cast (80%) was made up of local New Zealanders while a larger portion of the crew (95%) was local. The production employed 28 local Heads of Department, engaging local talent across a range of roles, including photography directors, costume designers, stunt coordinators, costume designers, and hair and makeup designers.

Fig. 3: Spend on goods and services in New Zealand, by industry



Source: Warner Bros., Oxford Economics

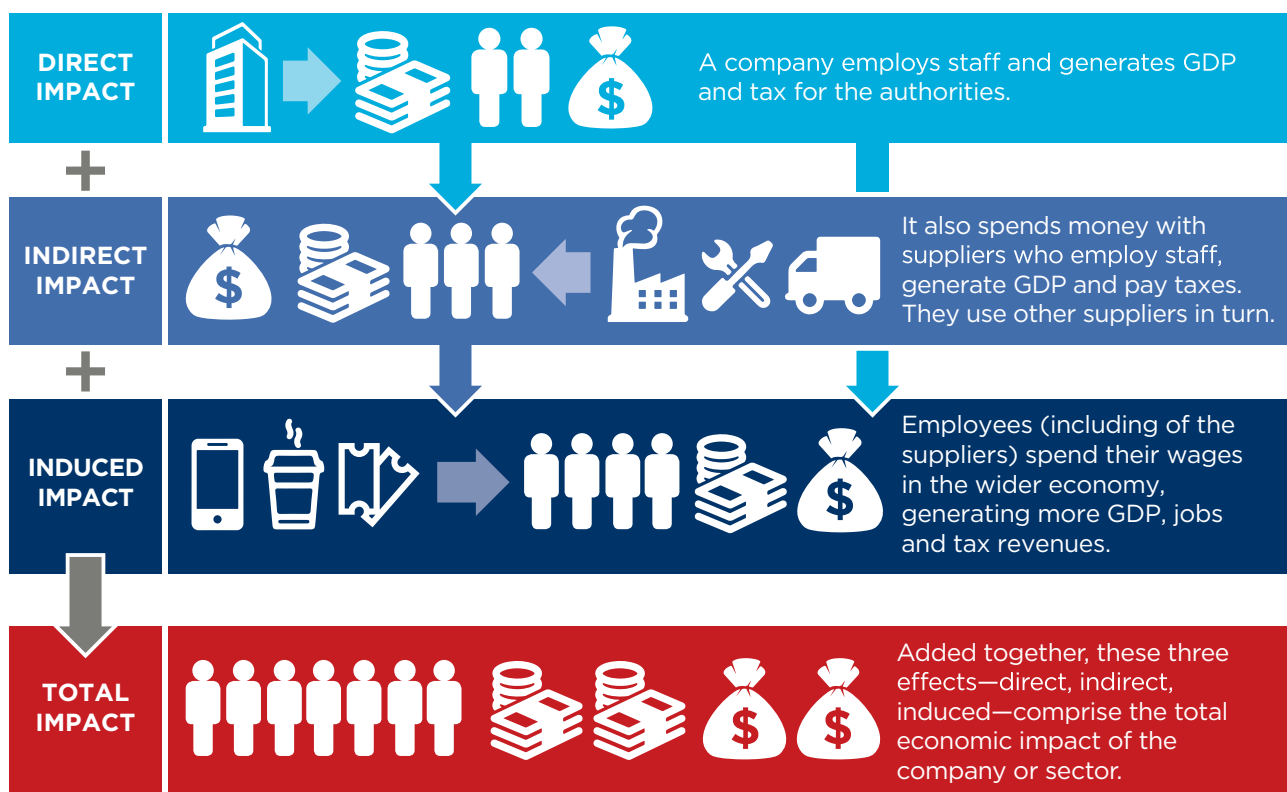


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3. ECONOMIC IMPACTS

3.1 CHANNELS OF IMPACT

The impact of the filming of Season One of *“Sweet Tooth”* on New Zealand’s economy is calculated using an economic impact assessment. This involves quantifying the production’s economic contribution on a national level across three channels of expenditure, where the total impact is the sum of the three channels.



Source: Oxford Economics

NZ\$66m

Total contribution to New Zealand's GDP supported by Season One of "Sweet Tooth"

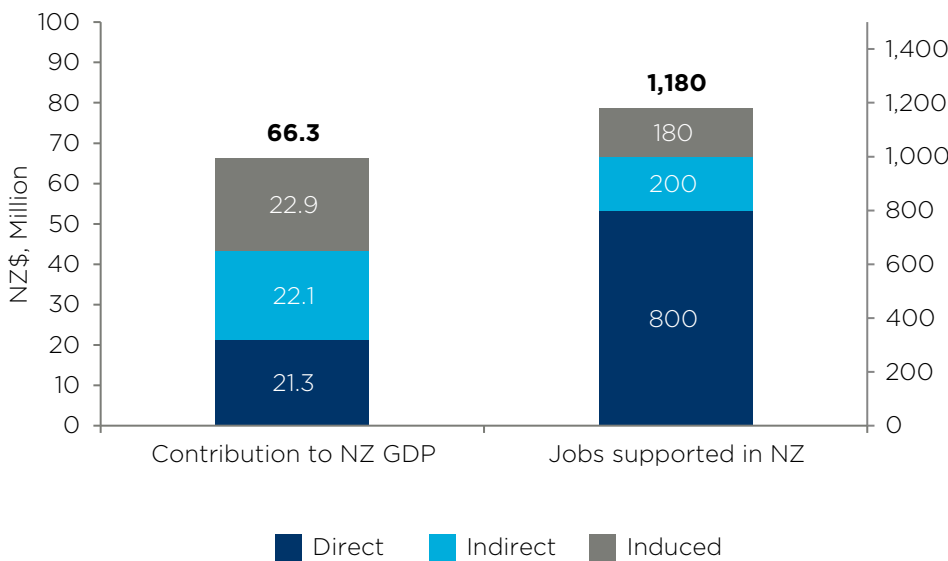
3.2 TOTAL IMPACT

Combining all channels of impact, we find that Season One of "Sweet Tooth" supported over NZ\$66 million contribution to New Zealand's GDP in 2020. Over NZ\$21 million, or 32%, of this was generated by the production itself (direct). The local spending on goods and services supported another NZ\$22 million along the supply chain (indirect), which represented 33% of the total.¹ The payment of wages by the production studios and local vendors in the show's supply chain (induced) stimulated almost NZ\$23 million contribution to GDP, or 34% (Fig. 3).

For Season One of "Sweet Tooth", for every NZ\$1 million in direct GDP generated by the production's own activities, its expenditure supported a further NZ\$2.1 million in New Zealand.²

The production of the show also had a significant impact on employment in the country. In 2020, Season One of "Sweet Tooth" supported a total headcount employment of 1,180³ across the country. This refers to employees that worked both full time and part time during the production. The TV series production itself employed an estimated 800 full time and part time workers, or 68% of the total. The local spending on goods and services supported another 200

Fig. 4: The total GDP and employment contribution supported by Season One of "Sweet Tooth" in New Zealand by channel of impact



Source: Oxford Economics

¹ While production spending with local NZ vendors totals approximately NZ\$25 million, NZ vendors may spend some part of this with non-NZ companies, resulting in an estimated NZ impact of NZ\$22 million.

12 ² This GDP multiplier effect is calculated by dividing the total impact (NZ\$66.3 million) by the direct impact (NZ\$21.3 million) and subtracting the result by 1.

³ This number includes all full time and part time workers employed by the production during filming and is based on our analysis of payroll data.

jobs along the regional supply chain or 17% of the total. A further 180 jobs, or 15% of the total, were supported by the spending of wages by production crews and employees at the show's suppliers across the country.

In 2020, for every 100 people the production directly employed, a further 47 jobs were supported across the country through secondary effects (with 25 added through indirect effects and 22 added through induced effects).⁴

According to Warner Bros., Season One of *"Sweet Tooth"* is estimated to have benefitted from NZ\$9.6 million in tax incentives. These incentives are estimated to have produced NZ\$6.91 in GDP for every dollar of tax incentive received by the production.

The remainder of this section describes the three channels of impact in more detail.

3.3 DIRECT IMPACT

During the production period, Season One of *"Sweet Tooth"* directly employed an estimated 800 full time and part time workers across New Zealand.

We estimate that the *"Sweet Tooth"* production made a NZ\$21.3 million direct contribution to the country's GDP in 2020, which came from the payment of employee compensation to locally based staff.⁵

1,180

Full time and part time jobs supported across New Zealand as a result of Season One of *"Sweet Tooth"*

⁴ This employment multiplier effect is calculated by dividing the total employment impact (1,180) by the direct employment impact (800) and subtracting the result by 1.

⁵ The contribution to GDP generated by a company or a project can be calculated as the sum of its surplus (profits) and employee compensation. This approach, known as the income approach, is consistent with the principles of national accounting. For the purposes of this study, we take a conservative approach to this calculation and focus on the employee compensation of local workers, excluding the profits associated with the production in our calculation of direct contribution to New Zealand's GDP.

3.4 INDIRECT IMPACT

The production’s positive contribution to New Zealand’s economy, however, extends beyond the contribution it makes directly through its own operations. This is related to the purchases of goods and services made from other firms in order to produce the show. This spending stimulates additional economic activity along the supply chain. This is referred to as the indirect impact.

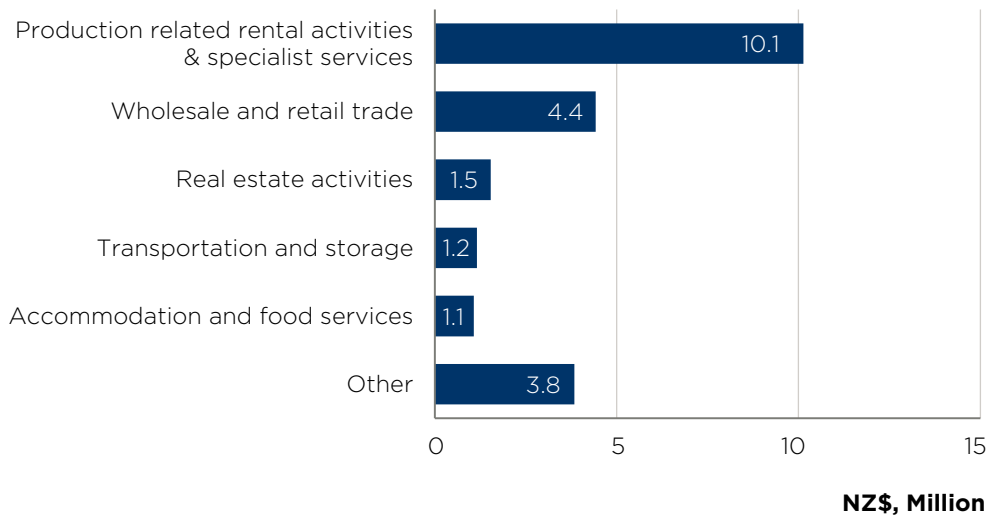
Oxford Economics calculated that the procurement associated with “*Sweet Tooth*” Season One stimulated a NZ\$22.1 million contribution to the country’s GDP along the domestic supply chain.

Over half of this indirect impact was in production related rental activities, specialist services, and the wholesale and retail trade industries, where the show’s supply chain spending stimulated a GDP contribution of NZ\$10.1 million (46%)

and NZ\$4.4 million (20%), respectively (Fig. 5).

The show’s expenditure on inputs of goods and services from locally based suppliers also stimulated 200 full time and part time jobs in the region.

Fig. 5: GDP contribution stimulated by the procurement of goods and services from local suppliers, by industry



Source: Oxford Economics

3.5 INDUCED IMPACT

During the production period, local labor was paid NZ\$21 million in gross wages and salaries. In addition to this, the people whose jobs are stimulated by local spending on goods and services are also paid additional wages and salaries.

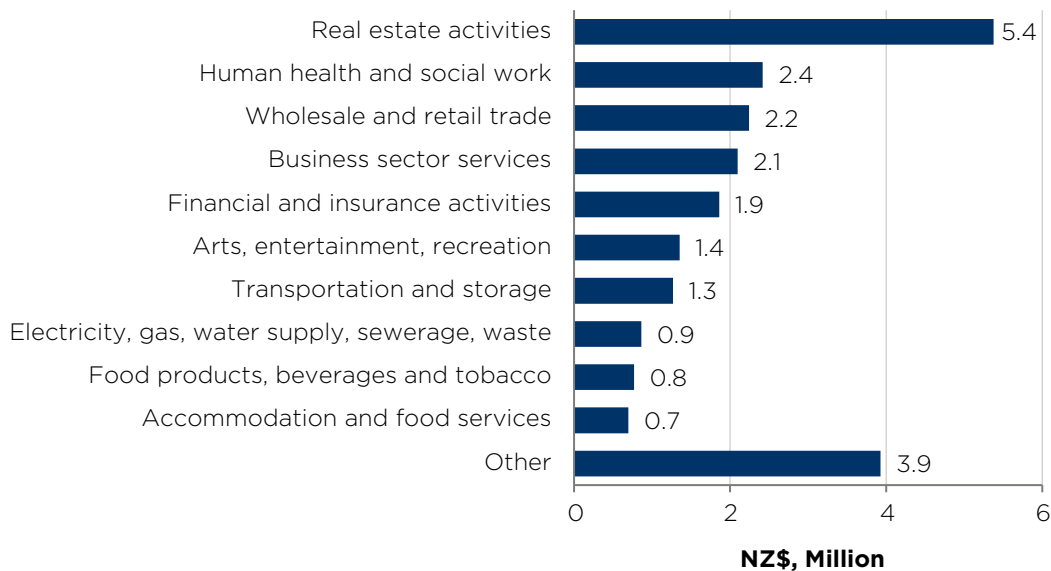
Production crews, and workers employed throughout the supply chain, spend a proportion of their wages at retail, leisure, and other

outlets across the country. This stimulates economic activity and employment at these firms, but also along their supply chains. This is referred to as the show's *induced* impact.

We estimate the wage-financed spending of local production crews and workers at locally based suppliers stimulated almost NZ\$23 million contribution to New Zealand's GDP during the production period (Fig. 6).

We estimate the wage-financed consumer spending of production crews and workers within the show's supply chain supported 180 full time and part time jobs across New Zealand in 2020.

Fig. 6: GDP contribution stimulated by the payment of wages to locally based workers, by industry



Source: Oxford Economics



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4. WIDER IMPACTS

In addition to the economic impacts that arise through production spending, television series such as *“Sweet Tooth”* can produce impacts that extend beyond the jobs and GDP they support.

The filming of *“Sweet Tooth”* is unique in the sense that while the filming of the TV series started before the COVID-19 pandemic (the pilot episode was filmed in 2019), the rest of the first season was filmed during the first year of the pandemic. The show was picked up in July 2020, filming was paused briefly, then resumed from September to December 2020. Meanwhile, many filming activities across the world were halted due to risks associated with working on large scale productions, and the broader entertainment industry experienced a significant setback.

“Sweet Tooth” was one of a handful of filming projects that was allowed to resume operations in New Zealand. This was largely due to the country’s relative success in limiting the spread of COVID-19 and likely had broader implications for the communities in which filming occurred. The production supported local businesses and production vendors that would have otherwise suffered larger losses due to limited activity during the pandemic. The economic impact calculations throughout this report are thus expected

to be conservative; the true economic contribution of the *“Sweet Tooth”* production likely extends much further beyond those captured in our estimates.

The success of Season One of *“Sweet Tooth”* has led to the renewal of the show for two more seasons. If production spending for additional seasons follows that of Season One, it is expected that the economic and broader impacts are likely to parallel those presented throughout the analysis of Season One in this report.



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APPENDIX: METHODOLOGY

The impact of the filming of Season One of “*Sweet Tooth*” on New Zealand’s economy is calculated using an economic impact assessment. This involves quantifying the production’s economic contribution to the region across three channels of expenditure. The channels of impact are:

- **Direct impact** – relates to the employment and economic activity generated at the filming locations across New Zealand.
- **Indirect impact** – captures the economic activity stimulated by the procurement of inputs of goods and services from the locally based supply chain.
- **Induced impact** – comprises the wider economic benefits that arise from the payment of wages by the television series, and the firms in its local supply chains, to staff who spend a proportion of this income in local retail, leisure, and other outlets.

The total impact is the sum of the three channels.

This enables us to build a picture of the series’ overall contribution to the region across two key metrics:

- The gross value-added contribution to New Zealand’s GDP.⁶
- Employment measured by headcount (includes both full time and part time workers).

The results are presented on a gross basis, ignoring any displacement of activity from other firms or activities. Additionally, the results do not consider what the resources currently used by the show’s production, or stimulated by its expenditure, could alternatively produce in their second most productive usage.

Data on the direct impact of “*Sweet Tooth*” Season One—including the show’s contribution to GDP and jobs created—were provided directly by Warner Bros. Direct GDP contribution in the region is taken to be equal to local employee compensation.

To estimate the indirect and induced GDP impacts of the show, we used Oxford Economics’ proprietary input-output model, constructed using a variety of sources including OECD input-output tables, national account data, and local employment statistics.

A basic domestic IO table gives a snapshot of an economy at a given point in time. The model shows the major spending flows from “final demand” (i.e., consumer spending, government spending, investment, and exports to the rest of the world); intermediate spending patterns (i.e., what each sector buys from every other sector—the supply chain in other words); how much of that spending stays within the regional economy; and the distribution of income between employment income and other income (mainly profits). In essence, an IO table shows who buys what from whom in the economy.

To estimate the indirect impact, we used vendor-level information on the amount spent and type of goods and services purchased from businesses based in the region over the course of the show’s production. To calculate the induced impact, we took the wages paid to workers, as provided by Warner Bros., and then allocated those to the sectors where they would have spent those wages in line with the proportions in the regional IO table. We then used those figures to show how many New Zealand dollars of GDP the show’s production supported in the regional economy for every NZ\$1 of direct GDP contribution, and how many jobs were stimulated across the region for each 100 people directly employed by the production.

⁶ Where GDP is the main indicator of economic activity in New Zealand. It is used to measure the rate of growth or decline of the economy, and when it enters a recession.

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April 2023

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To discuss the report further please contact:

Arushi Pasricha:

apasricha@oxfordeconomics.com

5 Hanover Sq,
8th Floor
New York,
NY 10004
USA

Tel: +1 646-786-1879

www.oxfordeconomics.com



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OXFORD
ECONOMICS

Global headquarters

Oxford Economics Ltd
Abbey House
121 St Aldates
Oxford, OX1 1HB
UK

Tel: +44 (0)1865 268900

London

4 Millbank,
Westminster,
London,
SW1P 3JA

Tel: +44 (0)203 910 8000

New York

5 Hanover Square, 8th Floor
New York, NY 10004
USA

Tel: +1 (646) 786 1879

Singapore

6 Battery Road
#38-05
Singapore 049909

Tel: +65 6850 0110

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Asia Pacific

Singapore
Hong Kong
Tokyo
Sydney

Email:

mailbox@oxfordeconomics.com

Website:

www.oxfordeconomics.com

Further contact details:

[www.oxfordeconomics.com/
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